KSENIIA GUBENKO — ACADEMIC PORTFOLIO

HIGH-SCHOOL STUDENT INTERESTED
IN STEM AND AI

ABOUT ME



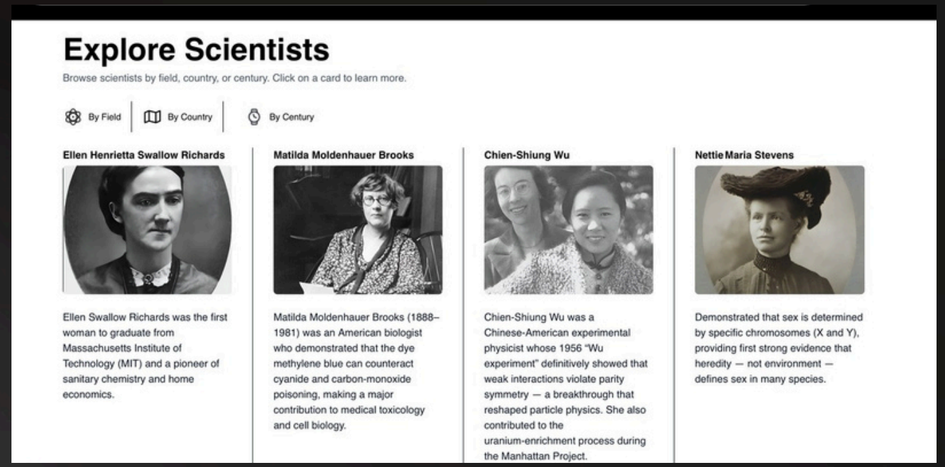
GPA: 12 / 12 | IELTS: 7.5

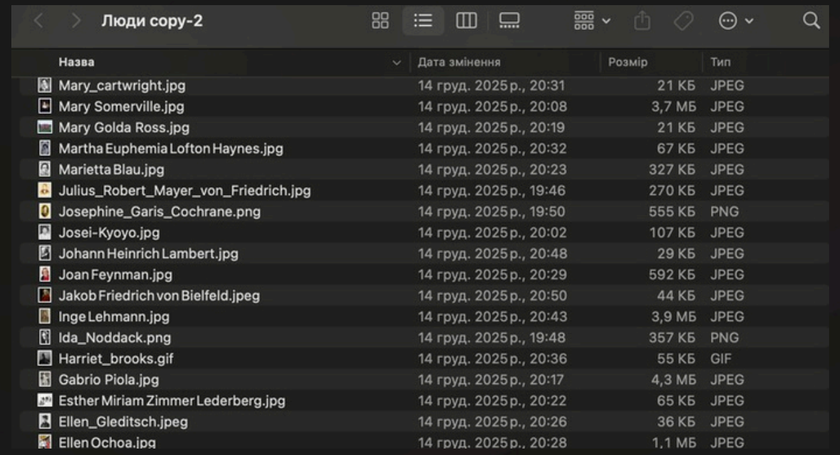
- High school student from Ukraine
- 3+ years of experience in programming and building technical projects.
- Proficient in Python, Solidity, Java, JavaScript,, Node.js, React, HTML, and CSS.
- Passionate about AI, web development, and creating innovative educational projects.

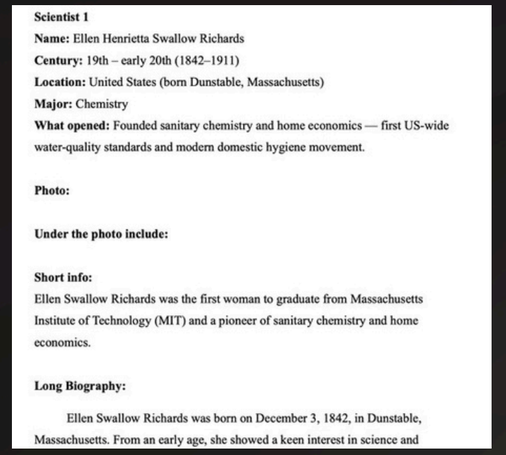
PROJECTS & EXPERIENCE

“Forgotten Scientists”

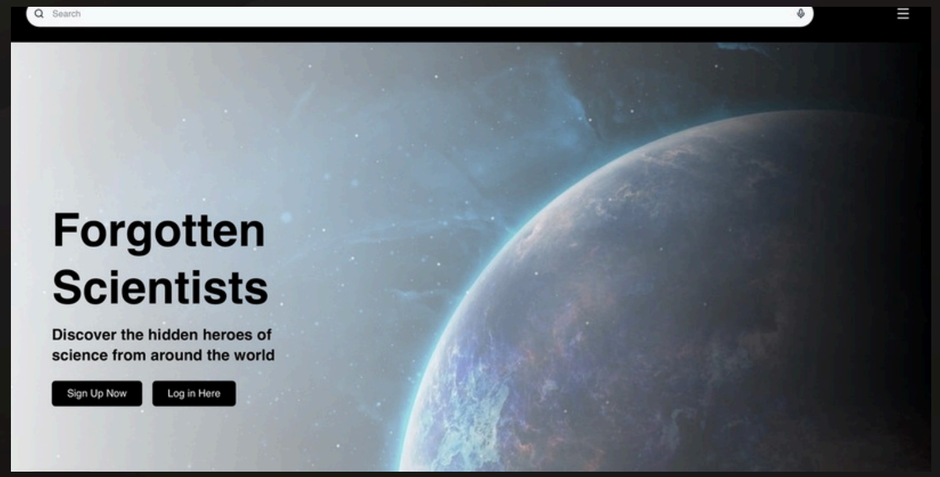
Forgotten Scientist is an **international project** in which I lead a team of **eight students** from different countries to develop a **website** dedicated to **overlooked scientists.** We have researched over **80 lesser-known scientists**, and the platform will present their biographies and contributions, aiming to highlight forgotten voices in science for real users.

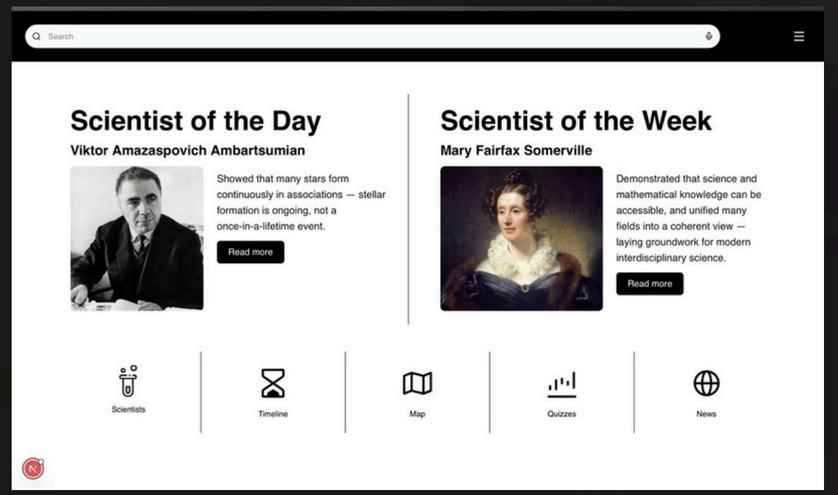


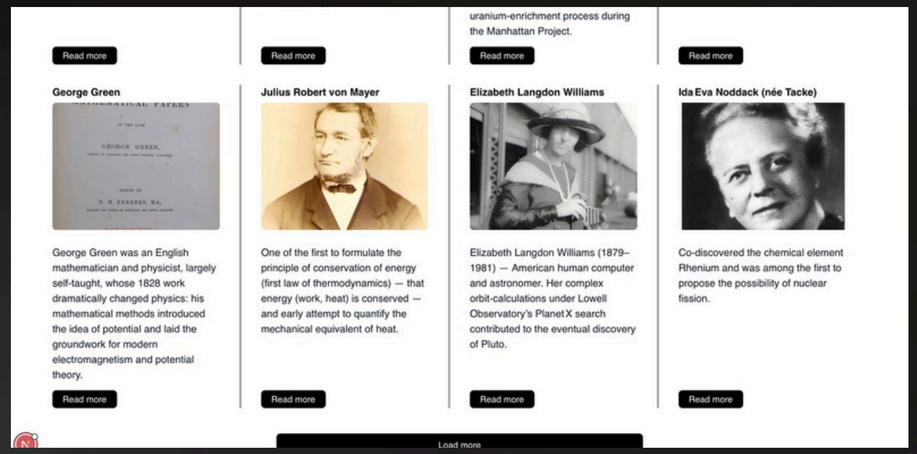




Here are the pages of the website, which is still a work in progress. You can review the website using this link.
https://forgotten-scientists.vercel.app



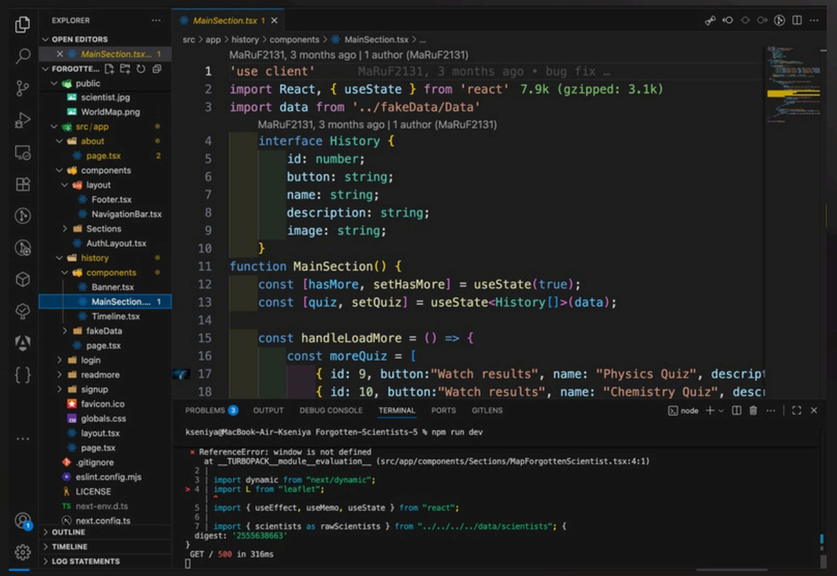


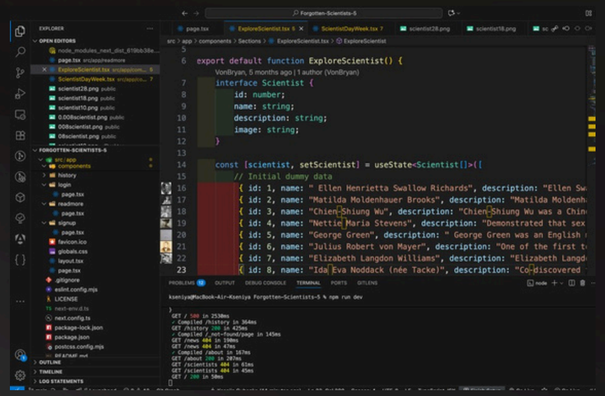


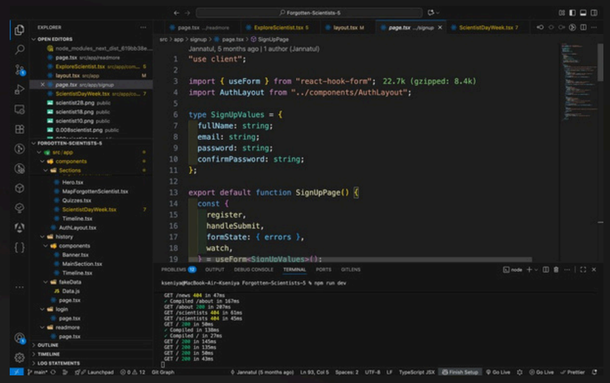


MY INVOLVEMENT

- **Team Leadership:** Led and coordinated a **team of 8 international member**s by assigning tasks, organizing workflows, reviewing progress, and ensuring project consistency and timely delivery.
- **Frontend Development:** Built most of the frontend using **React** and **TypeScript**, creating modular and reusable components for quizzes, scientist profiles, and timelines.
- **Dynamic Data Rendering:** Implemented dynamic rendering of scientist and quiz content using React state management (**useState**), enabling the interface to generate cards from structured data objects.



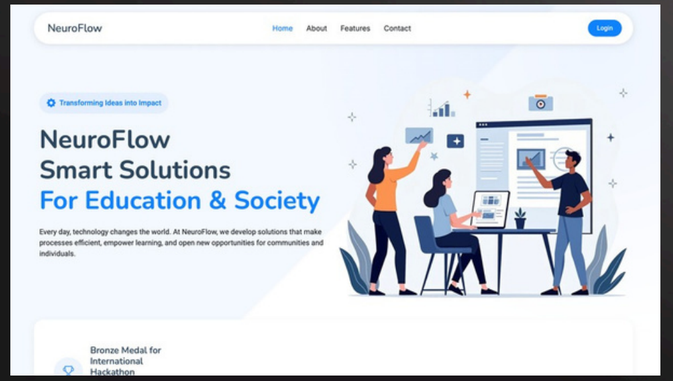




- **API Integration & Asynchronous Data Loading:** Built asynchronous data fetching using **fetch()** and **useEffect,** allowing the application to retrieve scientist data from a backend API and update the interface in real time.
- **Responsive UI Implementation:** Designed a responsive grid-based interface using **Tailwind CSS**, ensuring adaptive layouts and consistent card rendering across mobile, tablet, and desktop devices.

PROJECTS & EXPERIENCE

“NeuroFlow”



NeuroFlow is a project developed during the **international hackathon** in Bucharest, Romania, where our team built an interactive **platform** to help users find hackathon teams and secure sponsors. We designed and implemented the UI/UX structure with **HTML, CSS, JavaScript, and Python** and organized content to make the platform accessible and engaging. I participated as a **frontend developer**, contributing to the technical development and overall usability. Our project was awarded **Bronze Meda**l, placing 3rd among 27 international teams.





RESEARCH FOR JUNIOR ACADEMY OF SCIENCES OF UKRAINE

UAV Data Security with Blockchain – MAN / Junior Academy of Sciences is a research I developed over more than **seven months** to ensure secure storage and processing of data collected by drones using **blockchain technology**. I began with in-depth research on **UAV data collection** trends and **security challenges**, then designed and implemented a **prototype** to simulate the system's functionality. The platform leverages **cryptography, smart contracts**, and **decentralized storage** to protect information from unauthorized access, tampering, and loss, demonstrating a scalable and reliable solution for UAV data security. The results of this research were published at the **VII Ukrainian Youth Internet Governance Forum.**



ДЕПАРТАМЕНТ ОСВІТИ І НАУКИ
ВИКОНАВЧОГО ОРГАНУ КИЇВСЬКОЇ МІСЬКОЇ РАДИ
(КИЇВСЬКОЇ МІСЬКОЇ ДЕРЖАВНОЇ АДМІНІСТРАЦІЇ)

ДИПЛОМ

НАГОРОДЖУЄТЬСЯ

ГУБЕНКО
Ксенія Віталіївна

учениця 9 класу
Київського міжнародного ліцею
«СТАДІ ЕКЕДЕМІ ХАЙ СКУЛ»
Печерського району міста Києва

яка посіла ІІІ місце

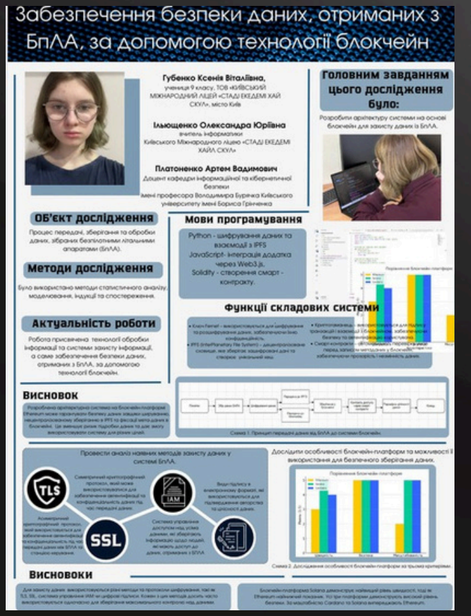
на ІІ (міському) етапі
Всеукраїнського конкурсу-захисту науково-дослідницьких робіт
учнів-членів Малої академії наук України
2024-2025 навчального року
в секції
«Кібербезпека»
відділення інформаційних технологій

Директор Департаменту Олена ФІДАНЯН

Наказ від 10 березня 2025 ро

реєстраційний № 1822

SYSTEM DESIGN: SECURE UAV DATA TRANSMISSION TO A BLOCKCHAIN NETWORK



From a prototype perspective, I designed and implemented a system for transmitting **UAV data to a blockchain network,** using **Solidity, Python,** and **JavaScript** to demonstrate a secure and reliable data pipeline from drones to a decentralized environment. The prototype shows how **cryptography, smart contracts,** and **decentralized storage** work together to ensure data integrity and prevent tampering or unauthorized access.
Below are **samples of the code I implemented**, as well as my **project poster** used during the research defense, which summarizes the system architecture and the key ideas of the project.

truffle-config.js | AdvancedDroneDataStorage.sol 1 | drone-blockchain.py 2 | Settings

drone-blockchain.py > ...

```python
from web3 import Web3 # type: ignore
from cryptography.fernet import Fernet # type: ignore
import ipfttpclient
import json
import time

# Генерація ключа для шифрування
def generate_key():
    return Fernet.generate_key()

# Шифрування даних
def encrypt_data(data, key):
    fernet = Fernet(key)
    return fernet.encrypt(data.encode()).decode()

# Підключення до локальної мережі Ethereum (наприклад, Ganache)
web3 = Web3(Web3.HTTPProvider("http://127.0.0.1:7545"))

# Перевірка підключення
if not web3.isConnected():
```

truffle-config.js | AdvancedDroneDataStorage.sol 1 | drone-blockchain.py 2 | Settings

AdvancedDroneDataStorage.sol > AdvancedDroneDataStorage > DroneData

```solidity
contract AdvancedDroneDataStorage {
    // Подія для логування додавання нових даних
    event DataAdded(uint256 indexed id, string encryptedData, string ipfsHash, uint256 timestamp, addres

    // Модифікатор для перевірки ролей
    modifier onlyRole(string memory role) {
        require(keccak256(abi.encodePacked(roles[msg.sender])) == keccak256(abi.encodePacked(role)), "U
        _;
    }

    // Функція для додавання даних від БпЛА
    function addData(string memory _encryptedData, string memory _ipfsHash) public onlyRole("operator")
        DroneData memory newRecord = DroneData({
            encryptedData: _encryptedData,
            ipfsHash: _ipfsHash,
            timestamp: block.timestamp,
            owner: msg.sender
        });
        droneDataRecords.push(newRecord);
        emit DataAdded(droneDataRecords.length - 1, _encryptedData, _ipfsHash, block.timestamp, msg.sen
    }
```

truffle-config.js | AdvancedDroneDataStorage.sol 1 | drone-blockchain.py 2 | Settings

AdvancedDroneDataStorage.sol > AdvancedDroneDataStorage > DroneData

```solidity
contract AdvancedDroneDataStorage {
    // Подія для логування додавання нових даних
    event DataAdded(uint256 indexed id, string encryptedData, string ipfsHash, uint256 timestamp, addres

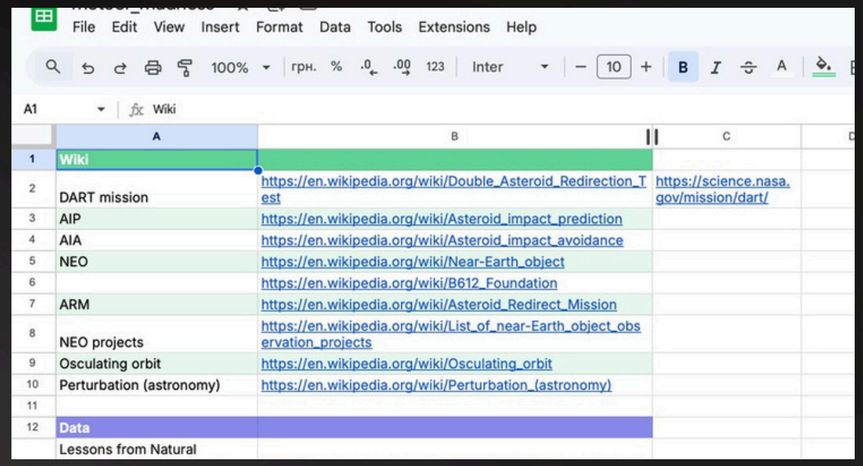
    // Модифікатор для перевірки ролей
    modifier onlyRole(string memory role) {
        require(keccak256(abi.encodePacked(roles[msg.sender])) == keccak256(abi.encodePacked(role)), "U
        _;
    }

    // Функція для додавання даних від БпЛА
    function addData(string memory _encryptedData, string memory _ipfsHash) public onlyRole("operator")
        DroneData memory newRecord = DroneData({
            encryptedData: _encryptedData,
            ipfsHash: _ipfsHash,
            timestamp: block.timestamp,
            owner: msg.sender
        });
        droneDataRecords.push(newRecord);
        emit DataAdded(droneDataRecords.length - 1, _encryptedData, _ipfsHash, block.timestamp, msg.sen
```

PROJECTS & EXPERIENCE

“Metter Madnesss”

Meteor Madness is a student-led project where our team built an interactive **web app** that **simulates asteroid impacts** on Earth using real **NASA data** in 42 hours. We incorporated **asteroid properties**, **trajectories**, and **potential consequence**s to create realistic, accessible **simulations**.

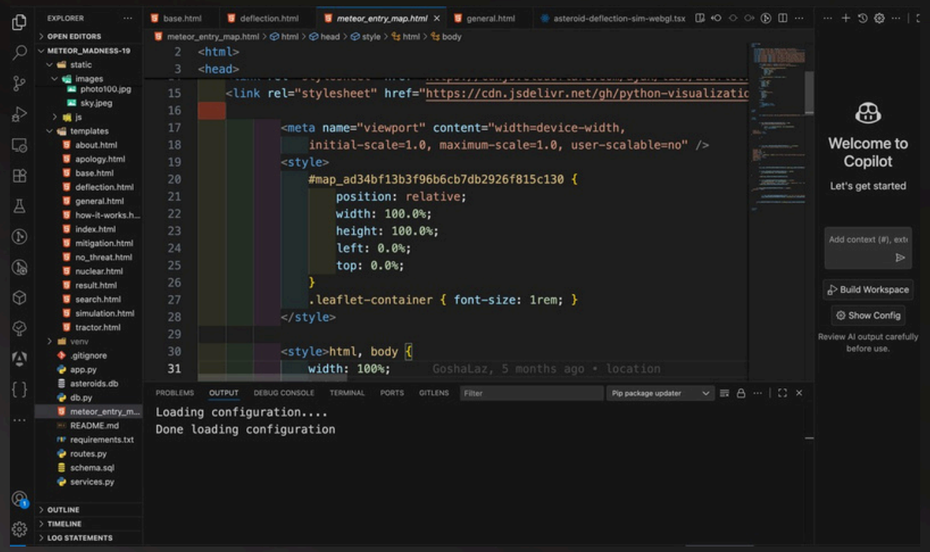


	A	B	C
1	Wiki		
2	DART mission	https://en.wikipedia.org/wiki/Double_Asteroid_Redirection_Test	https://science.nasa.gov/mission/dart/
3	AIP	https://en.wikipedia.org/wiki/Asteroid_impact_prediction	
4	AIA	https://en.wikipedia.org/wiki/Asteroid_impact_avoidance	
5	NEO	https://en.wikipedia.org/wiki/Near-Earth_object	
6		https://en.wikipedia.org/wiki/B612_Foundation	
7	ARM	https://en.wikipedia.org/wiki/Asteroid_Redirect_Mission	
8	NEO projects	https://en.wikipedia.org/wiki/List_of_near-Earth_object_observation_projects	
9	Osculating orbit	https://en.wikipedia.org/wiki/Osculating_orbit	
10	Perturbation (astronomy)	https://en.wikipedia.org/wiki/Perturbation_(astronomy)	
11			
12	Data		
	Lessons from Natural		



MY INVOLVEMENT

I developed the **entire frontend** of the project using **HTML, CSS,** and **JavaScript**, creating a fully interactive and responsive interface within 2 days. I integrated **Leaflet** to display an interactive map with markers, circles, and popups for geospatial data. To enhance the UI and responsiveness, I incorporated external libraries such as **Bootstrap**, **FontAwesome**, and **jQuery**. The result is a seamless, user-friendly map interface that works across devices and accurately visualizes the data.







PROJECTS & EXPERIENCE

“Golden Minute”

Founded and programmed **Golden Minute**, an AI-powered first-aid training platform with interactive emergency scenarios and personalized AI feedback. Advanced to the **Top 20 out of 365 participants** in SheLeads 2.0, presenting the MVP and business strategy. Continued developing the same project in the **Tech Use Mentorship Program** as Software Developer & Project Manager, **leading an 8-member team** and receiving validation from the **CEO & Co-Founder of Ileria.**


Star for Life
– empowering young people

CERTIFICATE

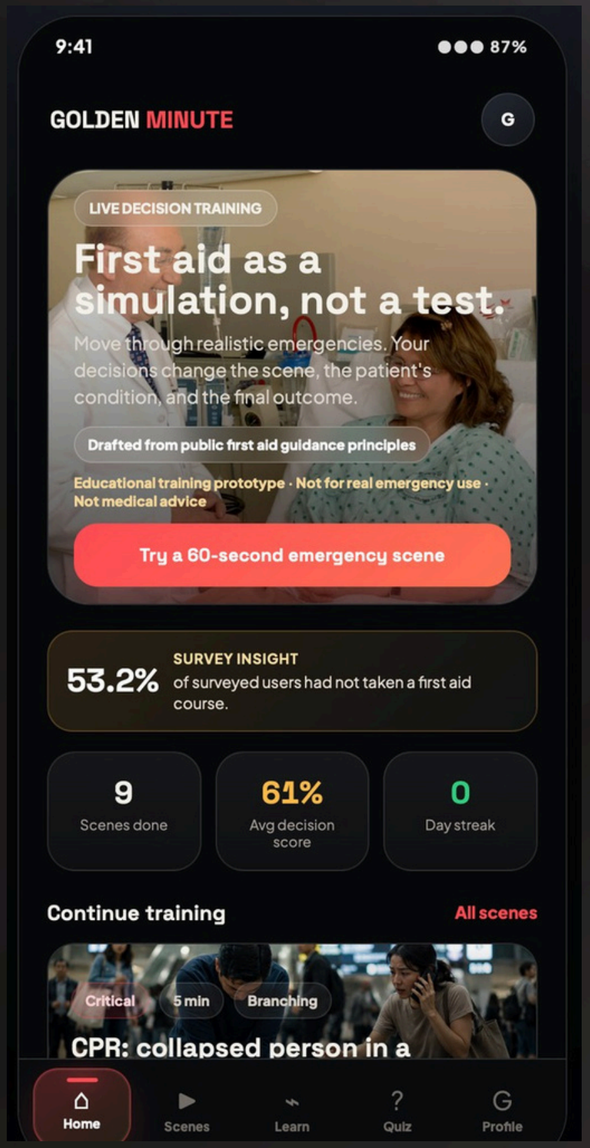
This certificate confirms that

KSENIIA GUBENKO

participated in the Tech Youth Mentorship Program and contributed to the development of the innovative IT project «Golden Minute», serving as a Multilingual Software Developer and Project Manager under the mentorship of Dzydz Oleh and Strubytskyi Sviatoslav, and successfully presented the results of the team's work.

Period:
15.02.2026—24.06.2026

Denys Volovyk
Executive Director
Star for Life Ukraine



LEADERSHIP & ACTIVITIES



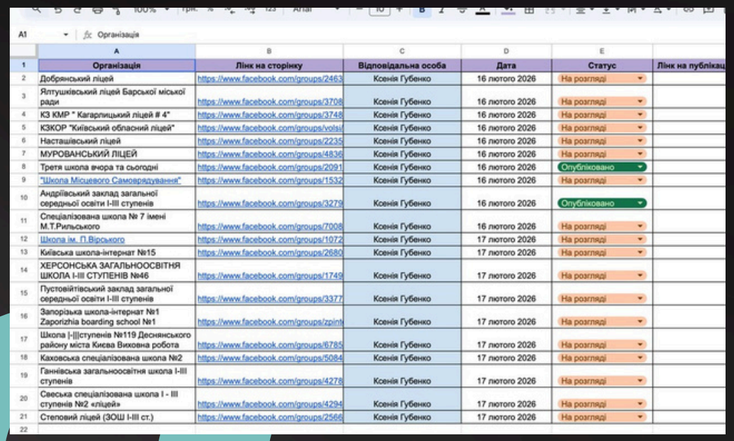
For the past **7 months**, I have been part of the **Stop-Sexting Children's Council,** helping organize a large-scale digital safety event with around **90 participants** and developing a simple educational **website** using **HTML and CSS** to host guides, resources, and event photos for teens.



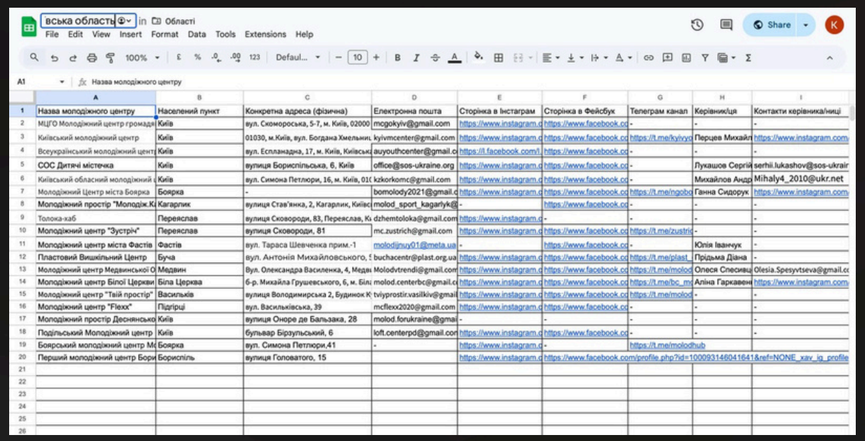


LEADERSHIP & ACTIVITIES

- **Women's League NGO — Researcher** — research on youth centers and partner organizations for collaboration projects; supported engagement for 100+ volunteers across mentorship, outreach, and project initiatives
- **Inclusive Academy — Volunteer Coordinator & Tutor** — Initially provided individualized mathematics, IT and English tutoring to 3 students with special educational needs, completing approximately 75 volunteer hours; subsequently advanced to coordinating a team of around 30 volunteers.
- **PyGirls — Volunteer Python Trainer** — Lead interactive Python workshops for 5–10 girls, strengthening Python fundamentals, coding confidence, and engagement through live coding.
- **Ukrainian Youth Parliamentary Movement — Member** — participation in youth civic initiatives and community projects
- **10:11 Mentorship Program — Mentee** — academic excellence, competitions, and leadership development mentorship



Організація	Лінк на сторінку	Відповідальна особа	Дата	Статус	Лінк на публікац
Добрянський ліцей	https://www.facebook.com/groups/2463	Ксенія Губенко	16 лютого 2026	На розгляді	
Ялтушківський ліцей Барської міської ради	https://www.facebook.com/groups/3709	Ксенія Губенко	16 лютого 2026	На розгляді	
КЗ КМР " Кагарлицький ліцей # 4"	https://www.facebook.com/groups/3748	Ксенія Губенко	16 лютого 2026	На розгляді	
КЗКОР "Київський обласний ліцей"	https://www.facebook.com/groups/voiai	Ксенія Губенко	16 лютого 2026	На розгляді	
Наставшівський ліцей	https://www.facebook.com/groups/2235	Ксенія Губенко	16 лютого 2026	На розгляді	
МУРОВАНСЬКИЙ ЛІЦЕЙ	https://www.facebook.com/groups/4836	Ксенія Губенко	16 лютого 2026	На розгляді	
Третя школа вчора та сьогодні	https://www.facebook.com/groups/2091	Ксенія Губенко	16 лютого 2026	Опубліковано	
"Школа Місцевого Самоврядування"	https://www.facebook.com/groups/1532	Ксенія Губенко	16 лютого 2026	На розгляді	
Андріївський заклад загальної середньої освіти І-ІІІ ступенів	https://www.facebook.com/groups/3279	Ксенія Губенко	16 лютого 2026	Опубліковано	
Спеціалізована школа № 7 імені М.Т.Рильського	https://www.facebook.com/groups/7008	Ксенія Губенко	16 лютого 2026	На розгляді	
Школа ім. П.Вірського	https://www.facebook.com/groups/1072	Ксенія Губенко	17 лютого 2026	На розгляді	
Київська школа-інтернат №15	https://www.facebook.com/groups/2680	Ксенія Губенко	17 лютого 2026	На розгляді	
ХЕРСОНСЬКА ЗАГАЛЬНООСВІТНЯ ШКОЛА І-ІІІ СТУПЕНІВ №46	https://www.facebook.com/groups/1749	Ксенія Губенко	17 лютого 2026	На розгляді	
Пустовійтівський заклад загальної середньої освіти І-ІІІ ступенів	https://www.facebook.com/groups/3377	Ксенія Губенко	17 лютого 2026	На розгляді	
Запорізька школа-інтернат №1 Zaporizhia boarding school №1	https://www.facebook.com/groups/zpint	Ксенія Губенко	17 лютого 2026	На розгляді	
Школа І-ІІІступенів №119 Деснянського району міста Києва Виховна робота	https://www.facebook.com/groups/6785	Ксенія Губенко	17 лютого 2026	На розгляді	
Каховська спеціалізована школа №2	https://www.facebook.com/groups/5084	Ксенія Губенко	17 лютого 2026	На розгляді	
Ганнівська загальноосвітня школа І-ІІІ ступенів	https://www.facebook.com/groups/4278	Ксенія Губенко	17 лютого 2026	На розгляді	
Сквська спеціалізована школа І - ІІІ ступенів №2 «ліцей»	https://www.facebook.com/groups/4294	Ксенія Губенко	17 лютого 2026	На розгляді	
Степовий ліцей (ЗОШ І-ІІІ ст.)	https://www.facebook.com/groups/2566	Ксенія Губенко	17 лютого 2026	На розгляді	



Назва молодіжного центру	Населений пункт	Конкретна адреса (фізична)	Електронна пошта	Сторінка в Інстаграм	Сторінка в Фейсбук	Телеграм канал	Керівник/ця	Контакти керівника/ниці
МЦГО Молодіжний центр громади	Київ	вул. Скоморохи, 5-7, м. Київ, 02000	mcgokyiv@gmail.com	https://www.instagram.c	https://www.facebook.cc	-	-	-
Київський молодіжний центр	Київ	01030, м.Київ, вул. Богдана Хмельниц	kyivmcenter@gmail.com	https://www.instagram.c	https://www.facebook.cc	https://t.me/kyivyc	Перцев Михайл	https://www.instagram.com
Всеукраїнський молодіжний центр	Київ	вул. Еспланадна, 17, м. Київ, Київськ	auyouthcenter@gmail.c	https://l.facebook.com/l	https://www.facebook.cc	-	-	-
СОС Дитячі містечка	Київ	вулиця Бориспільська, 6, Київ	office@sos-ukraine.org	https://www.instagram.c	https://www.facebook.cc	-	Лукашов Сергій	serhii.lukashov@sos-ukrair
Київський обласний молодіжний	Київ	вул. Симона Петлюри, 16, м. Київ, 01(	kzkorkomc@gmail.com	https://www.instagram.c	https://www.facebook.cc	-	Михайлов Андр	Mihaly4_2010@ukr.net
Молодіжний Центр міста Боярка	Боярка	-	bomolody2021@gmail.c	https://www.instagram.c	https://www.facebook.cc	https://t.me/ngobo	Ганна Сидорук	https://www.instagram.com
Молодіжний простір "Молодіж.К	Кагарлик	вулиця Ставʼянка, 2, Кагарлик, Київс	molod_sport_kagarlyk@	-	https://www.facebook.cc	-	-	-
Толока-хаб	Переяслав	вулиця Сковороди, 83, Переяслав, Ки	dzhemtoloka@gmail.com	https://www.instagram.c	-	-	-	-
Молодіжний центр "Зустріч"	Переяслав	вулиця Сковороди, 81	mc.zustrich@gmail.com	https://www.instagram.c	https://www.facebook.cc	https://t.me/zustric	-	-
Молодіжний центр міста Фастів	Фастів	вул. Тараса Шевченка прим.-1	molod_inuy01@meta.ua	-	https://www.facebook.cc	-	Юлія Іванчук	-
Пластовий Вишкільний Центр	Буча	вул. Антонія Михайловського, 1	buchacentr@plast.org.ua	https://www.instagram.c	https://www.facebook.cc	https://t.me/plast_	Придьма Діана	-
Молодіжний центр Медвинської	Медвин	Вул. Олександра Василенка, 4, Медв	Molodvtrendi@gmail.cor	https://www.instagram.c	https://www.facebook.cc	https://t.me/molod	Олеся Спесивц	Olesia.Spesyvtseva@gmail.c
Молодіжний центр Білої Церкви	Біла Церква	б-р. Михайла Грушевського, 6, м. Біл	molod.centerbc@gmail.c	https://www.instagram.c	https://www.facebook.cc	https://t.me/bc_m	Аліна Гаркавен	https://www.instagram.com
Молодіжний центр "Твій простір"	Васильків	вулиця Володимирська 2, Будинок К	tvlyprostir.vasilkiv@gmail	https://www.instagram.c	https://www.facebook.cc	https://t.me/molod	-	-
Молодіжний центр "Flexx"	Підгірці	вул. Васильківська, 39	mcflexx2020@gmail.com	https://www.instagram.c	https://www.facebook.cc	-	-	-
Молодіжний простір Деснянськог	Київ	вулиця Оноре де Бальзака, 28	molod.forukraine@gmai	-	-	-	-	-
Подільський Молодіжний центр	Київ	бульвар Бірзульський, 6	loft.centerpd@gmail.cor	https://www.instagram.c	https://www.facebook.cc	-	-	-
Боярський молодіжний центр М	Боярка	вул. Симона Петлюри,41	-	https://www.instagram.c	-	https://t.me/molodhub		
Перший молодіжний центр Бори	Бориспіль	вулиця Головатого, 15		https://www.instagram.c	https://www.facebook.com/profile.php?id=100093146041641&ref=NONE_xav_ig_profile			

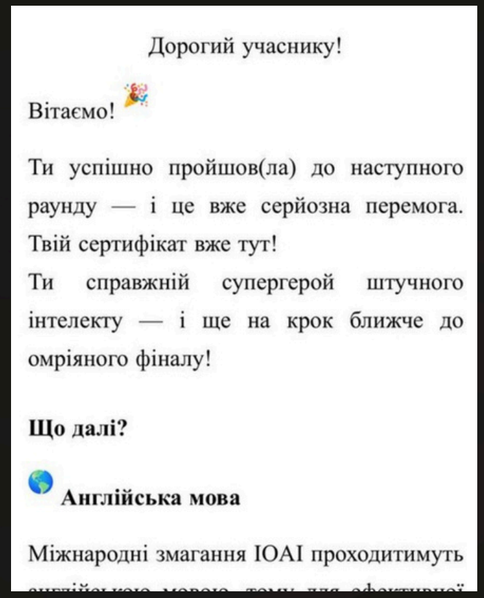


AWARDS

- Was accepted into the **Harvard Venture & Technology Summer Program (2026)** with an estimated **<13% acceptance rate** and awarded a **42% merit scholarship**, gaining experience in entrepreneurship and tech leadership.

- Selected Finalist — **IOAI Ukraine National Selection** (2026; ranked 11th among 2,300 applicants after a 3-stage national selection process; **Top ~0.5%**).





Дорогий учаснику!

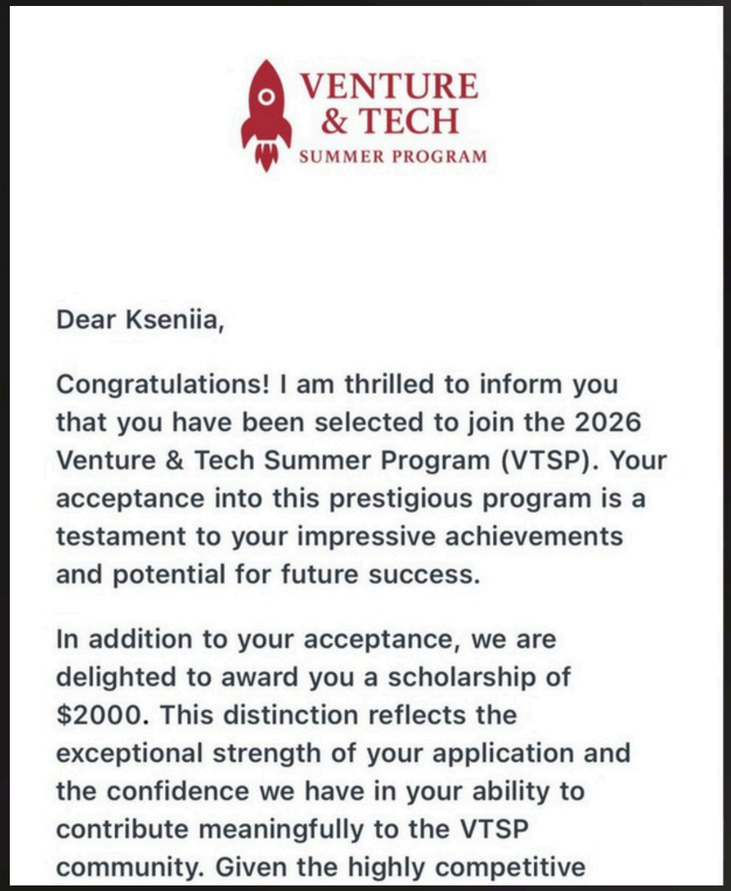
Вітаємо!

Ти успішно пройшов(ла) до наступного раунду — і це вже серйозна перемога. Твій сертифікат вже тут!
Ти справжній супергерой штучного інтелекту — і ще на крок ближче до омріяного фіналу!

Що далі?

Англійська мова

Міжнародні змагання IOAI проходитимуть



VENTURE & TECH SUMMER PROGRAM

Dear Kseniia,

Congratulations! I am thrilled to inform you that you have been selected to join the 2026 Venture & Tech Summer Program (VTSP). Your acceptance into this prestigious program is a testament to your impressive achievements and potential for future success.

In addition to your acceptance, we are delighted to award you a scholarship of $2000. This distinction reflects the exceptional strength of your application and the confidence we have in your ability to contribute meaningfully to the VTSP community. Given the highly competitive

AWARDS

3

Global Logic & Reasoning Competition (GLRC) 2026 — Finalist

Advanced to the Final Round through a two-stage international selection process focused on logical reasoning, complex problem-solving, and critical analysis. Final Round currently in progress.

4

International Computer Science Competition (ICSC) 2026 — Semi-Finalist

Advanced to the Pre-Final Round through an international selection process focused on algorithmic thinking, programming, and computational problem-solving.

5

TED-Ed Talks Ukraine (2026)

Selected as 1 of 20 participants from 6[illegible] applicants (**~32% acceptance rate**)

Developed public speaking and educational content skills



GLOBAL LOGIC & REASONING COMPETITION

EDITION OF 2026

SEMI-FINAL CERTIFICATE

2 November 2026 · PF-2026-1042AD7C878

presented to

Kseniia Gubenko

Gymnasium A+
Ukraine

for successfully completing the Semi-Final Round of the Global Logic and Reasoning Competition and qualifying for the Final Round 2026. The participant was challenged with problems in deductive reasoning, probabilistic judgment, critical reading, and modeling under supervised exam conditions.

Dr. Rami Aly, Program Coordinator

Fabian Schneider, Team Coordinator

This document was issued by the Global Logic and Reasoning Competition. The validity of this document and other documents issued by the Global Logic and Reasoning Competition can be verified with the verify© online on this page: https://glrc.org/verify



International Computer Science Competition

Edition of 2026

PRE-FINAL CERTIFICATE

presented to

Kseniia Gubenko

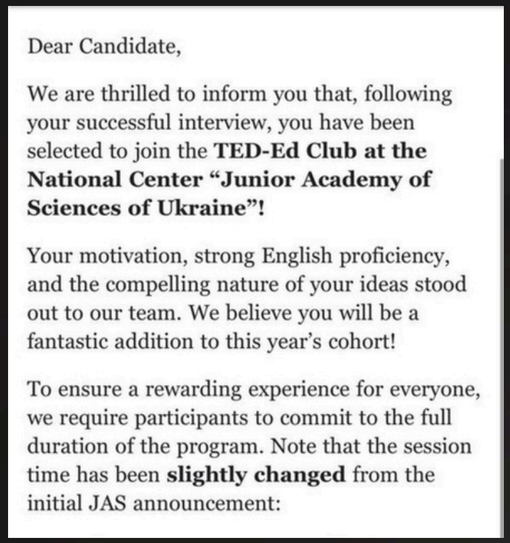
Date of Issue:	31 August 2026
Country:	Ukraine
School or Uni.:	Private Institution of General Secondary Education, Levels II-III, "A+ Gymna...
Verify-ID:	PF-2026-1037D72091F1

for participating in the Pre-Final Round of 2026. The International Computer Science Competition is an extracurricular science competition for high school and university students.

Dr. Rami Aly, Program Coordinator

Fabian Schneider, Team Coordinator

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Dear Candidate,

We are thrilled to inform you that, following your successful interview, you have been selected to join the **TED-Ed Club at the National Center "Junior Academy of Sciences of Ukraine"!**

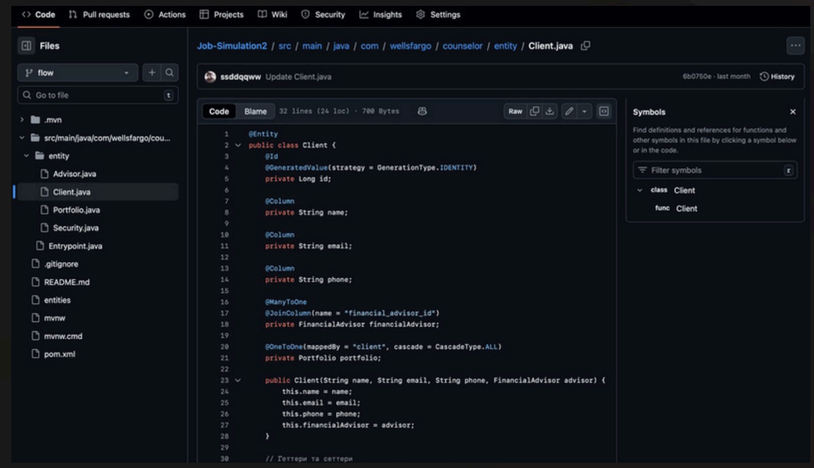
Your motivation, strong English proficiency, and the compelling nature of your ideas stood out to our team. We believe you will be a fantastic addition to this year's cohort!

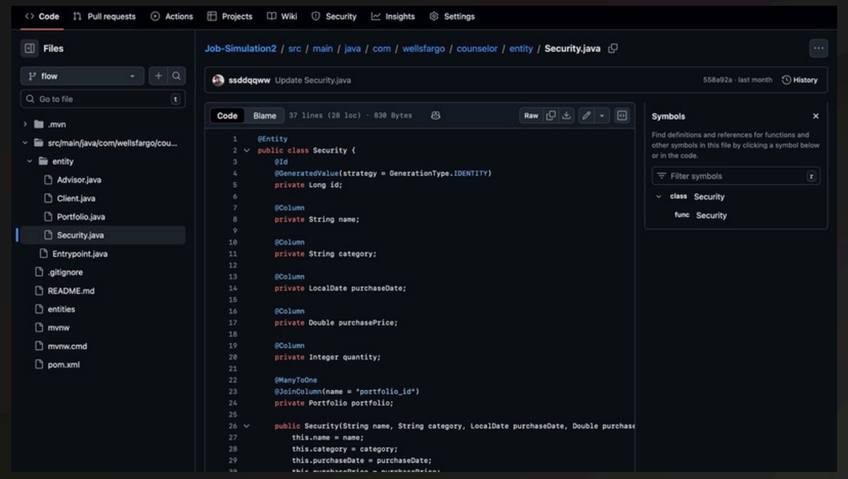
To ensure a rewarding experience for everyone, we require participants to commit to the full duration of the program. Note that the session time has been **slightly changed** from the initial JAS announcement:

COURSES

Forage

Completed **Wells Fargo Software Engineering Job Simulation** on **Forage**, where I designed and implemented a financial portfolio management system. I created an entity relationship diagram **(ERD)**, modeled the necessary data, and developed the system using **IntelliJ JPA**, publishing the project on **GitHub**.



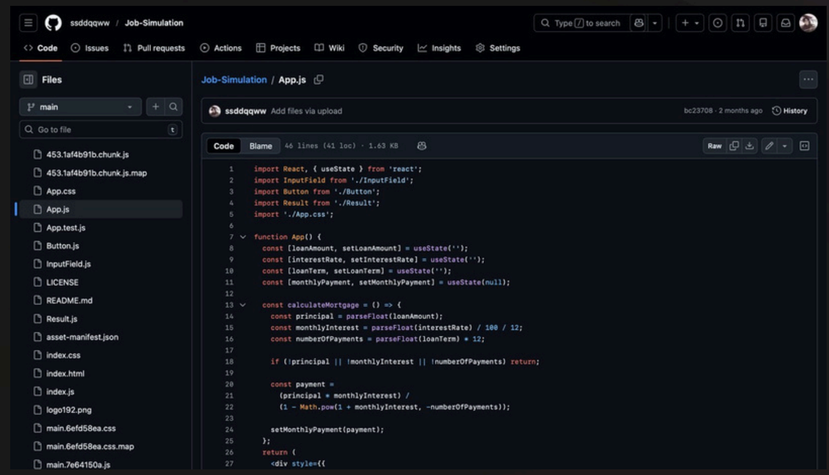




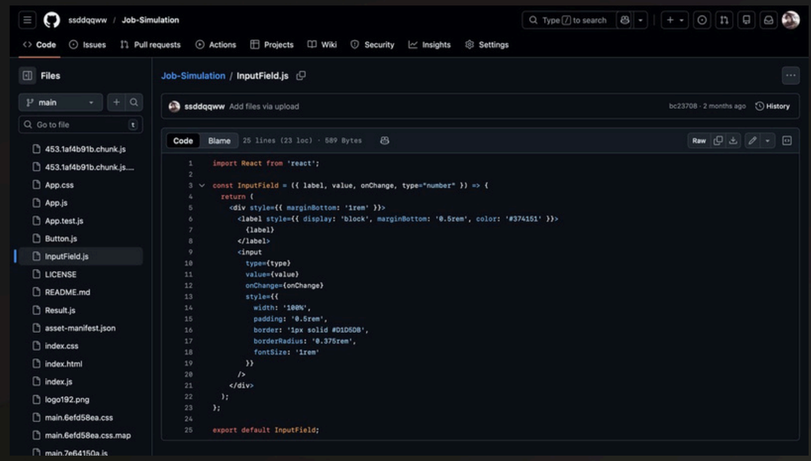
COURSES

Forage

Completed **Technology Engineering Job Simulation** (Lloyds Banking Group), where I developed and tested a mortgage calculator using **HTML, CSS, JavaScript**, and deployed it on **Azure**; practiced web development, UX design, and Git version control.







COURSES

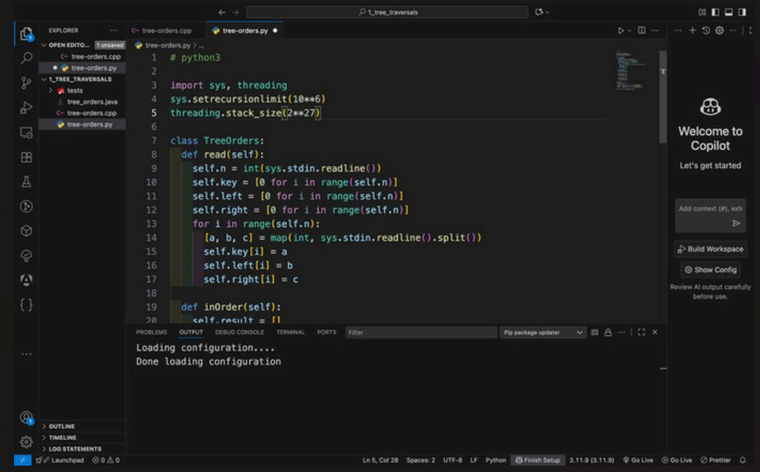
UC San Diego (Coursera)

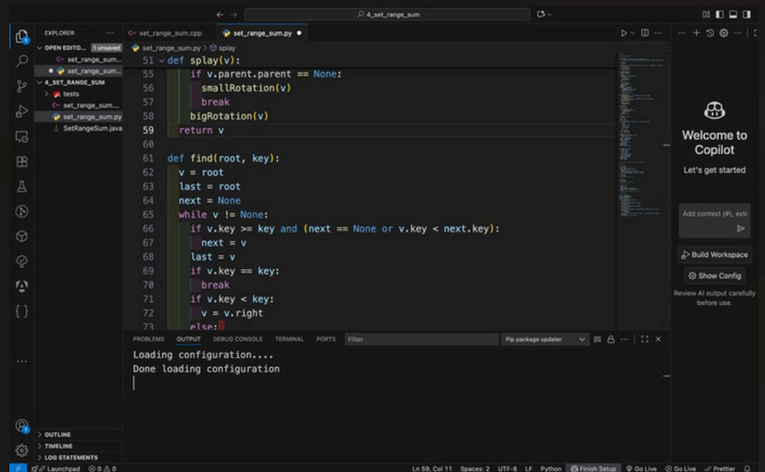
Data Structures

Data Structures & Algorithms Foundations helped me:

- **Master** core **data structures**: arrays, linked lists, stacks, queues, and trees, and understood when to use each.
- **Apply** data structures to solve **programming tasks** and optimize algorithms, including **substring manipulation** and **network packet simulation.**
- **Analyze** performance **trade-offs** to choose the most efficient structures for different computational problems.







COURSES

IBM (Coursera)

Introduction toArtificial Intelligence (AI)

AI Foundations & Application helped mes:

- **Master core AI concepts**, including Narrow, General, and Superintelligent AI, and their industry applications.
- Distinguish **AI vs. Augmented Intelligence** to enhance human capabilities and decision-making.
- **Apply** Generative AI **tools** for content creation, process automation, and interactive chatbot design.
- **Analyze AI evolution**, limitations, and practical strategies for real-world problem solving.



In progress:

- **Board Infinity (Coursera)** - Backend Development: Node.js, Express, MongoDB & REST APIs
- **Harvard CS50 — Introduction to Computer Science**

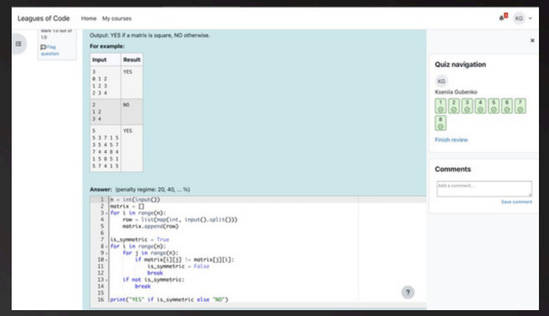
COURSES

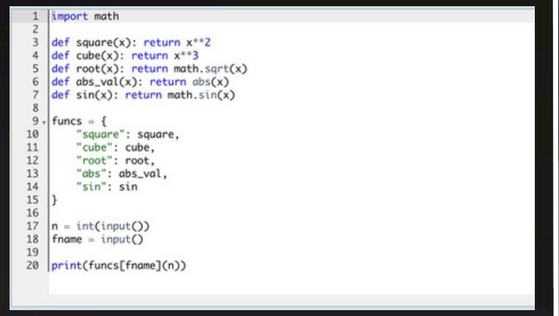
Leagues of Code

Python

Python Foundations and Advanced courses helped me:

- Reinforced **core programming fundamentals**, including variables, control flow, loops, and basic data structures, building a strong **foundation** in **Python**.
- **Applied** and extended these **concepts** through more advanced work with **data structures** such as nested lists, tuples, sets, and dictionaries in complex problem-solving tasks.
- Developed the **ability** to **write** modular, efficient **code using functions** (including **advanced** and **lambda functions**), with a focus on structured data processing and algorithmic thinking.





```python
import math

def square(x): return x**2
def cube(x): return x**3
def root(x): return math.sqrt(x)
def abs_val(x): return abs(x)
def sin(x): return math.sin(x)

funcs = {
    "square": square,
    "cube": cube,
    "root": root,
    "abs": abs_val,
    "sin": sin
}

n = int(input())
fname = input()

print(funcs[fname](n))
```

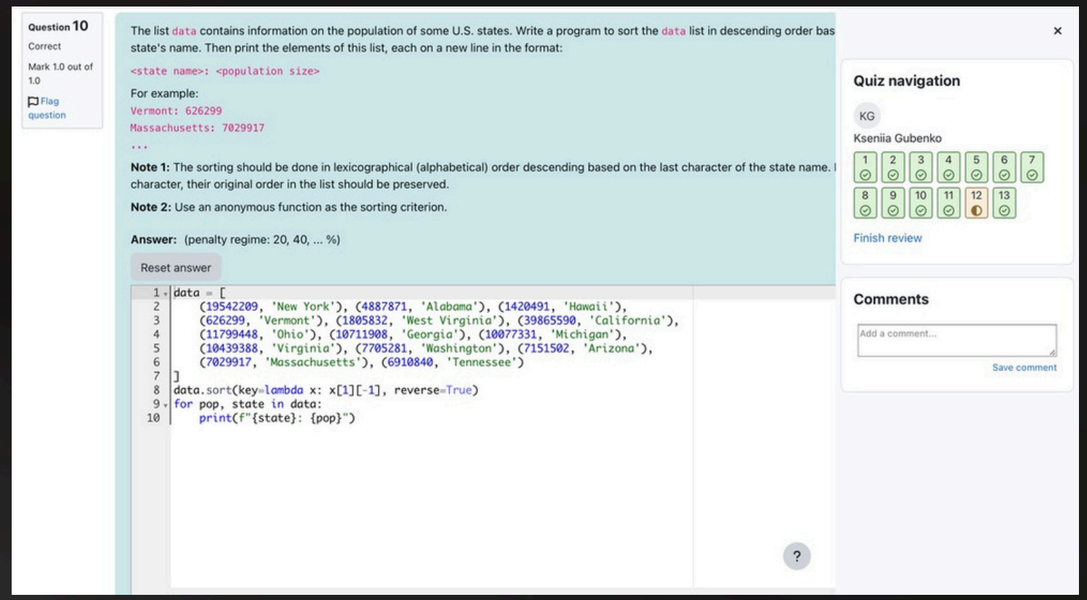


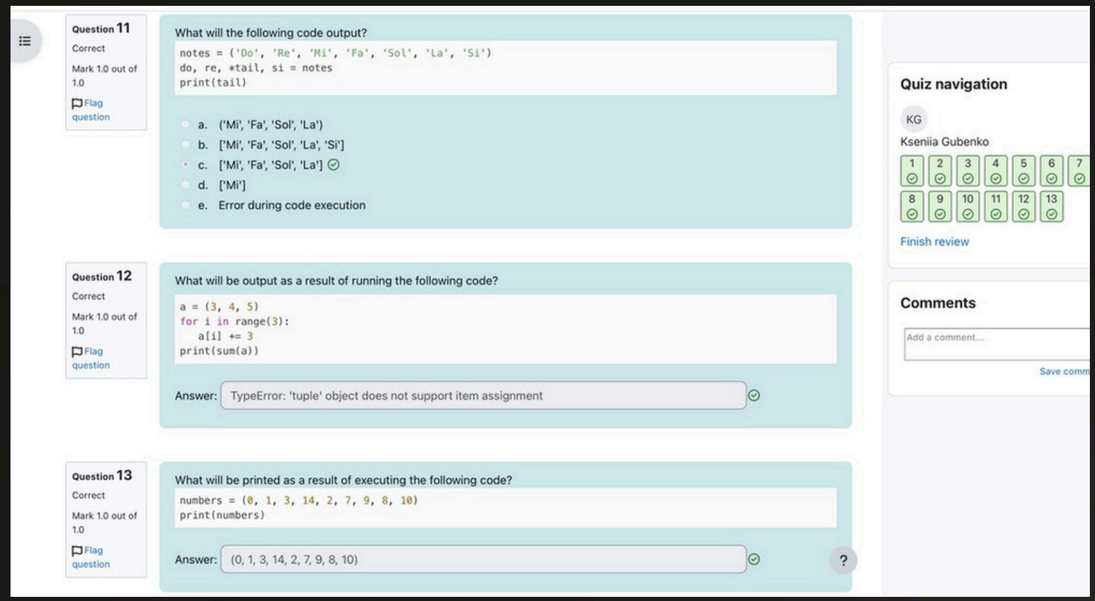


COURSES

Leagues of Code

Python





COURSES

Leagues of Code

Math

Math Foundation course helped me:

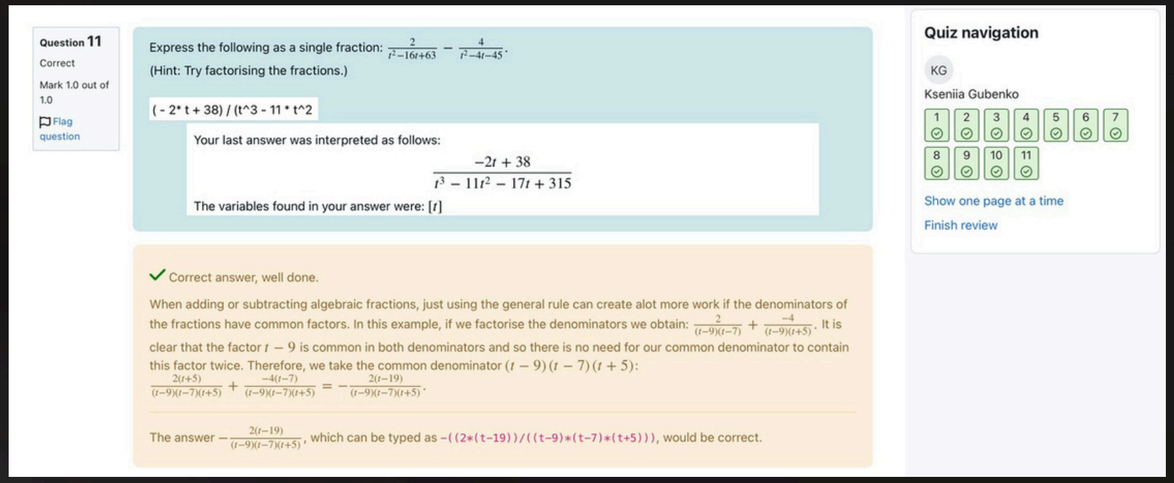
- **Revisited** and reinforced k**ey mathematical concepts**, including algebra, functions, geometry, trigonometry, and sequences, through structured **problem-solving practice.**
- Practiced **analysis** of **algebraic expressions, equations, and inequalities** to strengthen problem-solving skills and accuracy.
- Worked with **core function types** (linear, quadratic, exponential, and logarithmic) to understand their behavior and applications in different contexts.
- **Applied** mathematical **reasoning** to a variety of problems involving **polynomials, systems of equations, and basic mathematical modeling.**



COURSES

Leagues of Code

Math



Question 11
Correct
Mark 1.0 out of 1.0
Flag question

Express the following as a single fraction: $\frac{2}{t^2-16t+63} - \frac{4}{t^2-4t-45}$.
(Hint: Try factorising the fractions.)

(- 2* t + 38) / (t^3 - 11 * t^2

Your last answer was interpreted as follows:

$$\frac{-2t+38}{t^3-11t^2-17t+315}$$

The variables found in your answer were: [t]

Correct answer, well done.

When adding or subtracting algebraic fractions, just using the general rule can create alot more work if the denominators of the fractions have common factors. In this example, if we factorise the denominators we obtain: $\frac{2}{(t-9)(t-7)} + \frac{-4}{(t-9)(t+5)}$. It is clear that the factor $t-9$ is common in both denominators and so there is no need for our common denominator to contain this factor twice. Therefore, we take the common denominator $(t-9)(t-7)(t+5)$:
$\frac{2(t+5)}{(t-9)(t-7)(t+5)} + \frac{-4(t-7)}{(t-9)(t-7)(t+5)} = -\frac{2(t-19)}{(t-9)(t-7)(t+5)}$.

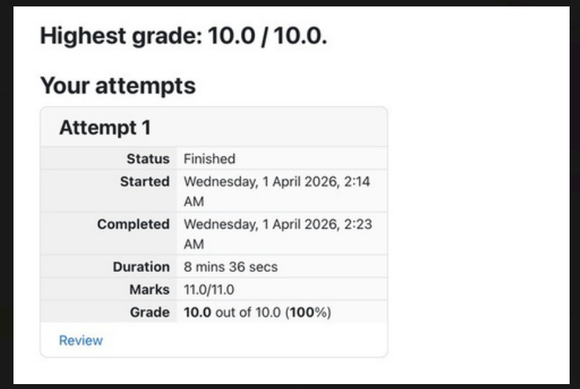
The answer $-\frac{2(t-19)}{(t-9)(t-7)(t+5)}$, which can be typed as `-((2*(t-19))/((t-9)*(t-7)*(t+5)))`, would be correct.

Quiz navigation

KG
Kseniia Gubenko

1 2 3 4 5 6 7
8 9 10 11

Show one page at a time
Finish review



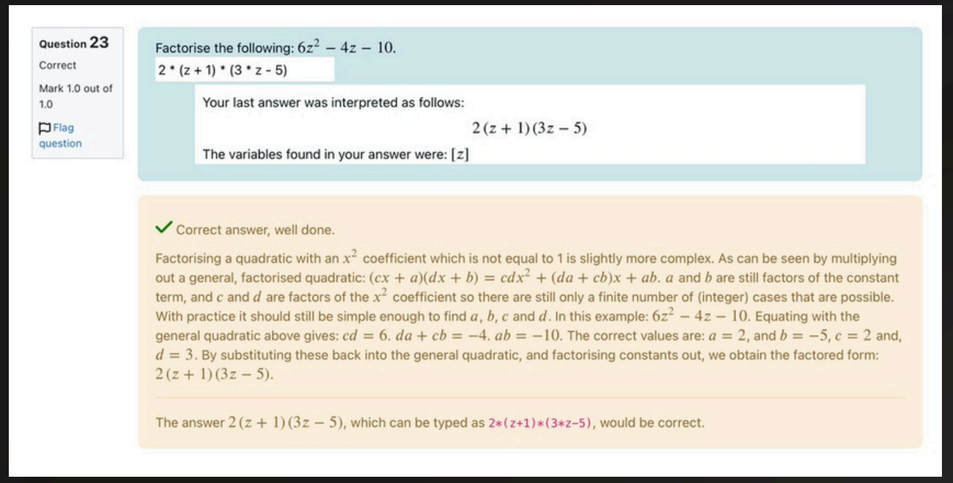
Highest grade: 10.0 / 10.0.

Your attempts

Attempt 1

Status	Finished
Started	Wednesday, 1 April 2026, 2:14 AM
Completed	Wednesday, 1 April 2026, 2:23 AM
Duration	8 mins 36 secs
Marks	11.0/11.0
Grade	**10.0** out of 10.0 (**100**%)

Review



Question 23
Correct
Mark 1.0 out of 1.0
Flag question

Factorise the following: $6z^2 - 4z - 10$.
2 * (z + 1) * (3 * z - 5)

Your last answer was interpreted as follows:

$$2(z+1)(3z-5)$$

The variables found in your answer were: [z]

Correct answer, well done.

Factorising a quadratic with an x^2 coefficient which is not equal to 1 is slightly more complex. As can be seen by multiplying out a general, factorised quadratic: $(cx+a)(dx+b) = cdx^2 + (da+cb)x + ab$. a and b are still factors of the constant term, and c and d are factors of the x^2 coefficient so there are still only a finite number of (integer) cases that are possible. With practice it should still be simple enough to find a, b, c and d. In this example: $6z^2 - 4z - 10$. Equating with the general quadratic above gives: $cd = 6$. $da + cb = -4$. $ab = -10$. The correct values are: $a = 2$, and $b = -5$, $c = 2$ and, $d = 3$. By substituting these back into the general quadratic, and factorising constants out, we obtain the factored form: $2(z+1)(3z-5)$.

The answer $2(z+1)(3z-5)$, which can be typed as `2*(z+1)*(3*z-5)`, would be correct.

THESE EXPERIENCES HELPED ME DEVELOP:

Technical Skills

Byparticipating in hackathons liketheNASA Space Apps Challenge, INFOMATRIX, engaging in Forage simulations, and developing my own projects and research, I have applied my skills in **real-world scenarios,** advancing my expertise in **both frontend** and **backend development**.

Entrepreneurship & Leadership

Through TechnovationGirls,She Leads 2.0, andmyownprojects, I strengthenedteam leadership, project management, and entrepreneurial skills, learning to l**ead teams**, d**elegate tasks**,and **driveprojects** to real results.

Problem Solving & Analytical Skills

During my research at the Junior Academyof Science, I analyzedhowdrone datacan be securely transmitted via blockchain. I **broke down complex systems**, **identified critical challenges,** and **designed step-by-step solutions,**strengthening my analytical thinking and problem-solvingskills.

Innovation & Collaboration

Through own initiatives, I developed innovativesolutions whileworkingclosely with diverse teams. I learned to **combine creative thinking** with effective **teamwork**, **coordinate ideas** across team members, and **implement projects** that deliver real impact.

FUTURE GOALS

I aim to deepen my knowledgein **Artificial Intelligence**and **Machine Learning**,buildingonmystrong foundation in frontend

and backend development. I want to apply this knowledge in practice through **courses, competitions**, and **real-world projects**, ultimately working toward becoming a **specialist in AI in medicine**.

Advanced AI & ML Skills

Participate in **specialized courses** and **projects** to strengthen expertise in machine learning algorithms and AI applications.

Practical Application & Competitions

Apply knowledge through **hackathons, Olympiads,** and **research projects** to solve real-world problems and gain hands-on experience.

AI in Medicine

Focus on projects and initiatives that use **AI to improve healthcare,** combining technical skills with social impact.

Thank you for reviewing my presentation! I look forward to connecting and sharing more about my projects and experiences.

Contact

LinkedIn: *Kseniia Gubenko*

Email: *kssgubenko@gmail.com*