

# Emil Indzhev

## EDUCATION

- 2018 – 2021 **St Catherine's College, University of Oxford, UK**  
*BA Computer Science*  
GPA: 86.75/100  
Rank: First place
- 2013 – 2018 **Baba Tonka High School of Mathematics, Ruse, Bulgaria**  
*Secondary Education*

## WORK EXPERIENCE

NOVEMBER 2021 – ONGOING

Radix Trading

### *Quantitative Technologist*

Improved latency and robustness of market data processing in trading systems. Built a new reconciliation and monitoring tool. Working on adding features to the research pipeline.

JUNE 2021 – SEPTEMBER 2021

Jane Street

### *Quantitative Trading Intern*

Analyzed historical data about trading patterns, participated in mock trading challenges and had a number of trading and finance related classes.

JULY 2020 – SEPTEMBER 2020

Jane Street

### *Software Engineering Intern*

Worked on an internal tool used for managing database permissions and roles based on specifications given by scripts.

JULY 2019 – SEPTEMBER 2019

Ocado Technology

### *Software Engineering Intern*

Worked on a reinforcement learning project about training a robotic arm. Added custom features and environments to the company branch of the Robosuite simulator.

SEPTEMBER 2018 – FEBRUARY 2019

Musala Soft

### *Software Developer*

Developed algorithmic problems for Musala Soft's international programming competition CodeIT.

## SOFTWARE SKILLS

- LANGUAGES C++, C, Python, OCaml, Scala, Haskell, Java, C#, JavaScript
- PLATFORMS Windows, Linux
- OTHER Git,  $\LaTeX$ , Microsoft Office, Google Sheets



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## PERSONAL PROJECTS

### *Evolving Snakes*

Snakes in an environment similar to the classical game Snake are controlled by neural networks and can reproduce. The snakes evolve and varying emergent behaviors arise.

### *Particle Structures*

Physics simulation with procedurally generated laws that lead to particles forming interesting lattices.

### *AIs for Board Games*

AIs for various board games, based on hard-coded heuristics, various search algorithms, or Monte Carlo approaches.

### *IUPAC Name Generator*

Generates the scientific names of complex organic compounds according to the IUPAC specifications.

### *Physics Simulation*

Physics simulation made up of basic building blocks. Complex physical phenomena, such as wave diffraction, appear without being preprogrammed.

### *Kigarai*

A machine learning library for C++ built from scratch. Supports most common types of layers and activation functions, as well as adding custom ones.

## ACHIEVEMENTS AND AWARDS

### *At Oxford*

2021 **Overall highest final grade**

*Highest final grade for the degree of BA Computer Science*

2021 **Best student project**

*Best dissertation/project submitted for the degree of BA Computer Science*

2021 **Publication in Information Processing Letters**

*Paper title: On complementing unambiguous automata and graphs with many cliques and cocliques*

## International competitions

- 2022 **Google Hash Code**  
*2nd place, with team Multiocular O*
- 2020 **Google Hash Code**  
*Finalist, with team Eel*
- 2018 **Microsoft Bubble Cup**  
*Finalist, with team nikva tikva*
- 2017 **International Autumn Tournament in Informatics**  
*Bronze Medal*
- 2017 **International Linguistics Olympiad**  
*Bronze Medal*
- 2016 **International Autumn Tournament in Informatics**  
*Bronze Medal*
- 2015 **Balkan Olympiad in Informatics**  
*Bronze Medal*
- 2014 **Junior Balkan Olympiad in Informatics**  
*Gold Medal*
- 2014 **International Conference on Computer Systems and Technologies**  
*Crystal Prize for Best Paper*

## Notable national competitions

- 2018 **National Olympiad in Linguistics**  
*Silver Medal*
- 2018 **Spring Competition in Informatics**  
*Gold Medal*
- 2018 **National Olympiad in Physics**  
*Laureate*
- 2018 **National Olympiad in Informatics**  
*Gold Medal*
- 2017 **Autumn Competition in Physics**  
*Silver Medal*
- 2017 **Young Physicists' Tournament**  
*First Place, with team Perun*

## OTHER ACTIVITIES

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ONGOING

Informatics and Linguistics Competitions

### *Problem Setter and Grader*

Frequently setting problems for Bulgarian national and international competitions in informatics. Also, occasionally setting problems for linguistics and mathematics competitions, as well as grading the works of competitors.

ONGOING

Various Places

### *Competitive Programming Lecturer*

Occasionally holding lectures on competitive informatics topics such as some advanced algorithms and data structures at various summer schools, academies, etc.

## LANGUAGE SKILLS

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BULGARIAN	Native
ENGLISH	Fluent
ESPERANTO	Basic
GERMAN	Basic