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Skills

Languages

Polish	-	Native
English	-	Fluent
German	-	Basic
Spanish	-	Basic

Programming Languages

Python	-	Advanced
Haskell	-	Advanced
C++	-	Advanced
C	-	Advanced
Rust	-	Moderate
Java	-	Moderate
CUDA	-	Moderate
Kotlin	-	Basic
SQL	-	Basic
Assembly	-	Basic

Framework Skills

Tensorflow	DALI
PyTorch	Pandas
Numpy	PyPlot
Keras	MLFlow
RAPIDS	

Other Skills

TAMP	Git
NLP	Latex
CV	Linux
CAD	Arduino
3D Printing	Algorithmics

Bartłomiej Cieślar

I am a Masters exchange student at MIT. My current research includes Robotics and Machine Learning. Through my 10 years of computing experience I have been improving my skills in Robotics, Deep Learning, 3D Printing and Algorithms.

Education

2023-2024	Massachusetts Institute of Technology Exchange (EECS)
2020-2024	Imperial College London (MEng Computing)

Work Experience

- **IOG Glasgow Haskell Compiler Developer Intern** (April-August 2023)
  Introduced the module export deprecation system ghc proposal
  Developed the instance declaration deprecation system ghc proposal
  Implemented the incomplete record selectors warning ghc proposal
  Applied a number of other bug-fixes in the compiler
- **Meta Clang-Tidy Developer Intern** (July-September 2022)
  Developed infrastructure and 2 checks for linting CUDA with clang-tidy
  Added support for running the checks on existing projects (e.g. Pytorch)
- **NVIDIA DALI Library Developer Intern** (July-September 2021)
  Developed an implementation of a tar-based WebDataset for the library
  Participated in daily meetings discussing the development progress
  Streamlined the feature integration process using CI/CD tools
- **IBM RPA Developer Intern** (July-August 2019)
  Developed automatization for a large Polish telecomunications company
  Participated in meetings and discussed new features with the client
  Enhanced already existing solutions and advised colleagues on problems
  Collaborated in an Agile-oriented environment

Research Projects

- **Future Foresight for ML based Task and Motion Planning** (September 2023 - May 2024)
  Exploring a way to condition the low-level TAMP search on entire task plan
  Working in Professors Tomás Lozano-Pérez and Leslie Kaelbling's lab
- **Novel cultural alignment analysis metric for non-english LLMs** (Fall 2023)
  Creating a differentiable metric of cultural alignment with the input language
  Part of Professors Yoon Kim, Chris Tanner and Jacob Andreas' MIT NLP class
- **Improving scalability of a novel probabilistic language on Road Geometry Reconstruction** (October 2022 - January 2023)
  Improved the extensibility and usability of the original ProbFx library
  Worked in a group under Professor Nicolas Wu

Selection of Academic Achievements

- Exchange at MIT (2/300 @ Imperial Computing, ~60 globally) (2023)
- Dean's List (top 10% students) (2023, 2022, 2021)
- Corporate Partnership Programme Award for academic performance (2023)
- Olav Beckmann Project Prize for outstanding 2nd year group project (2022)
- G-Research Prize for top 10 Bachelor students at ICL Computing (2021)

- Finalist of Polish National Olympiad in Informatics (2019, 2018)
- Finalist of Polish National Olympiad in Mathematics (2019)
- Scholar of Ministry of National Education (2018, 2017, 2016)
- Laureate of Junior Polish National Olympiad in Mathematics (2017, 2016)
- Laureate of Junior Polish National Olympiad in Informatics (2017, 2016, 2015)

Key engineering projects

Programming Projects
- Built a system for catching objects flying at a robot using Vision algorithms (part of the Robotic Manipulation class at MIT) (2023, Group project, Python)
- Implemented a full rust-based compiler for the WACC language (~20k lines of code) (2022, Group project, Rust)
- Built parts of the PintOS operating system - Scheduler, Processes, Memory Management (2021, Group project, C)
- Built an assembler to work with an ARM32 emulator with an 8-bit PONG as an example of usage (2021, Group project, C)
- Built an Advanced GUI Phone Book with military-grade encryption, AI Face Recognition, multiple filtering options and automated messaging capabilities (2020, Python)
- Built a Server for automation of scoring and evaluation of solutions from Deep Learning Workshops problems (2019, Python)
- Built a Socket server with user management capabilities for local remote gaming (2018, C++)

Deep Learning Personal Projects
- Worked on an MuZero implementation using Huawei's Mindspore framework for the MSRL project (2022)
- Collaborated on assessment of different strategies for Loan Credibility for KredoBank's risks department (2019)
- Built an Anime Faces Autoencoder for showcasing the technology during workshops (2019)

Mechatronics Projects
- Conducted preliminary evaluation of radio systems for an Interstellar solar sail based Cubesat (May-September 2021)
- Designed a Full CanSat with the Imperial College Space Society (October 2020-April 2021, Group Project)
- Personally built a quadcopter with mission scheduling, payload carrying and quick transportation capabilities (2017)
- Built a fully 3D-printed robot arm with simple Inverse Kinematics (2016)

Workshops Organization and Tutoring
- Lead Deep Learning Workshops for High School students from Warsaw (June 2019)
- Lead an Algorithmics School Club for High School students (September 2018-June 2019)
- Co-Tutored Algorithmics Workshops for High School students (February 2019)
- Co-Tutored Algorithmics Workshops for Middle School Students (June 2018)