Ludek Cizinsky

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Website: cizinsky.cc
Github: ludekcizinsky

Skills

Communication	English (Professional Proficiency), Czech (Native)
Languages	Python, SQL, R, C, C++, TypeScript, Java
Frameworks	PyTorch, Sci-kit learn, Numpy , Pandas, Matplotlib, Next.js, Flask
Utilities	Git, Vim, VS code, Jupyter Notebook

Education

Present **École polytechnique fédérale de Lausanne**,
Data Science, Master of Science.

2020–2023 **IT University of Copenhagen**,
Data Science, Bachelor of Science.
GPA – 11.9/12 (highest in the class)

Experience

2023 **Data Scientist**, Sharpgrid, Prague / Copenhagen.
- Developed a PySpark-based analytical pipeline to identify outlet chains. As a second project, created an MVP product to help companies like RedBull and Heineken understand their market position using detailed transaction data.

2021–2023 **Teaching Assistant**, IT University of Copenhagen, Copenhagen.
- Most relevant courses: NLP and Deep Learning (2023), Machine Learning (2022), Database Systems (2022), Linear Algebra & Optimization (2021, 2022), Applied Statistics (2022). Furthermore, prepared extensive course materials for Machine Learning and Linear Algebra & Optimization as a personal initiative.

2019–2021 **Software Developer**, Kaya VC, Prague / Copenhagen.
- Developed a data processing pipeline for extracting company information from various internet sources (e.g., blogs, public databases). Further, created internal applications to automate fund management tasks using Google Cloud Platform, Python, and JavaScript.

2019–2020 **Product Team Intern**, Twisto Payments, Prague.
- Led a tender to select an identity verification technology provider for KYC compliance. Implemented a new pricing plan in one of Twisto's markets.

2018 **EP Intern**, European Parliament, Brussels.
- Participated in a two-week internship supporting the daily activities of European Parliament member Jiří Pospíšil.

2018 **Marketing Manager**, ForClassmates.com, Hradec Kralove.
- Led company-wide marketing, working on graphics, video production, PR, and event organization. Successfully launched the product in a new country.

2016–2017 **Writer**, ForClassmates.com, Hradec Kralove.
- Contributed to the creation of math textbooks currently used by over 30,000 high school students in the Czech Republic and Slovakia.

Projects

2023 **Mutagenicity Prediction**, *Graph Neural Networks, PyTorch, WandB*.
- Implemented node convolutional and pooling layers in PyTorch to process molecular graphs for mutagenicity prediction. Integrated edge features and used the Integrated Gradient method for interpretability. Tested various configurations, and then summarised the results and findings in a short report.

2022–2023 **AI Student Organization**, *Deep Learning, NLP, Computer Vision, Multi-Modal Models, LLM*.
- Co-founded AITU, a student organization dedicated to staying current with advancements in artificial intelligence. The group meets weekly to review and discuss state-of-the-art research papers in the field. In addition, I have also written 5 blog posts summarising the papers we have read.

2023 **Bachelor Thesis**, *Neural Cellular Automata, PyTorch, Quality Diversity Optimization*.
- Explored the interactive application of Neural Cellular Automata (NCA) for game level generation. Introduced interactivity to NCA, allowing designers to fix specific tiles in the generated game levels. Created a demo for experimenting with the interactive NCA.

2022 **ML teaching material**, *ML algorithms, Decision Theory, Teaching, Numpy, Seaborn*.
- Created 23 notebooks providing in depth commented solutions to the exercises in the machine learning course ranging from simple Linear Regression to more complex topics such as Neural Networks or Decision Theory. The material can be found on my website.

2022 **Language Capabilities of PLStream**, *Apache Flink, Sentiment Analysis, PyTorch, NLP*.
- Authored a research paper during the Deep Learning course, assessing the language capabilities of the unsupervised sentiment labeling framework PLStream using the Checklist framework.

2022 **Glass Forensic Analysis**, *Neural Network, Decision Tree, NumPy*.
- Implemented neural network with backpropagation and decision tree from scratch for the final machine learning project. Evaluated their performance in predicting glass fragments for law forensics. Finally, created a report summarising all the results and findings.

2022 **ML Library**, *Python, NumPy, ML algorithms*.
- Implemented a collection of machine learning algorithms from scratch using NumPy.

Voluntary Work

Present **Running Coach**.
- With personal bests of 1:16:59 in the half-marathon and 2:48:09 in the marathon, I aim to share my running experience. Currently assisting friends in their training, with a future goal of having my own running team.

2022–2023 **Bi-Liquid Rocket**, *DanSTAR*.
- Contributed to DanSTAR, a student-run organization focused on constructing a reusable bi-liquid rocket. Developed a flash storage driver and integrated it with the third-party file system, FatFs.

2021–2023 **Student Mentor**, *ITU*.
- Mentored first-year students to ease their high school-to-university transition.

Awards & Scholarships

2022 **Blue Dot Award**, *Danish Technical University*.
- Award acknowledging contributions to the DanSTAR bi-liquid rocket project, Fornax.

2019 **University Scholarship**, *Kellner Family Foundation*.
- Received a selective scholarship for studying abroad at a prestigious university, but couldn't attend University College London for Computer Science due to financial constraints, even with the scholarship.

2019 **Excellent Academic Results**, *Gymnasium J. K. Tyla*.
- Award for outstanding high school academic performance.