Roman Knyazhitskiy

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Professional Summary

Software Engineer and Researcher with a focus on AI, including machine learning, computer vision, and robotics. Passionate about developing solutions that are both innovative and applicable to real-world problems. I aim to contribute meaningfully to research and development teams, particularly in environments that value creativity and practical application.

Work Experience

Head of AI, Delft Mercurians   05/10/2023 - Present

- Led a team of 3 engineers in developing AI control systems for robotics competitions.
- Spearheaded the creation of 'cotix', a continuous-time, differentiable simulator in JAX, providing the foundation for the implementation of more efficient learning algorithms.
- Ensured that AI solutions were properly tested with CI/CD, runtime type checking, and heavy test suite, allowing for early detection of several critical bugs.

Software Engineer, Delft Mercurians   01/05/2023 - 05/10/2023

- Developed sensor fusion toolkit for our wheeled platform, allowing for more accurate calibration of Kalman Filter.
- Analyzed past movement data, establishing sensor fusion performance benchmarks, and improving overall system reliability.

Education and Training

BSc Computer Science and Engineering, TU Delft   01/09/2022 - Present

- GPA: 9.5/10

International A Levels   01/09/2020 - 01/12/2022

- Pure Mathematics: A*
- Further Mathematics: A*
- Physics: A*

Honours and Awards

- 'Best Software Solution' award, RoboCup 2019 Sydney, for AI applications in robotics.
- 1st place in RoboCup Junior Competitions (three times), competing against 10+ teams.
- 2nd place in AIIJC with the sign language translation app.
- 3rd place at Groningen Algorithmic Programming Contest.

Open Source Contributions

- Contributed to jaxtyping, enabling IPython runtime type checking.
- Enhanced functionalities in jaxtyping and Equinox, resolving multiple issues.
- Authored a script for efficient OpenCV installation on Khadas VIM3.
- Optimized the core mining algorithm of JSECoin, improving efficiency by an order of magnitude.

Skills

- **Languages:** Russian (Native), English (Fluent)
- **Soft Skills:** Team Leadership, Problem-Solving, Creative Thinking, Learning Agility
- **Project management:** Agile, Scrum, Waterfall
- **Machine Learning:** Equinox, PyTorch, JAX, OpenCV, HuggingFace, W&B
- **Programming Languages:** C/C++, Java, HTML/CSS/JavaScript, SQL, Rust, Python
- **Other Tools:** git, flake8, ruff, containerd, JIRA, GitHub