Stepan Shabalin

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EDUCATION

- **Georgia Institute of Technology**   Atlanta, GA
  Bachelor of Science in Computer Science; GPA: N/A   *Aug. 2023 – Current*

- **School 4 of Cousteau**   St. Petersburg, Russia
  High School; GPA: 3.82 (4.77/5)   *Sep. 2021 – May 2023*

EXPERIENCE

- **MIT Reality Hack**   Online
  Web Tools Team   *Apr 2021 - Current*
  - **Hardware checkout system**: Built workflow for making requests for AR and VR hardware during the event thorugh scanning QR codes and keeping track of ownership using Next.js and Firebase.

- **Sberbank**   St. Petersburg
  Intern   *Aug 2021*
  - **Recommendation systems research**: Researched transformers for recommendation systems with reinforcement learning.

- **Deepfloyd**   Online
  Intern   *Aug 2022 - Present*
  - **Autoencoders for latent diffusion models**: Ran experiments comparing different ways of training variational autoencoders for diffusion models using PyTorch and Taming Transformers.
  - **Latent 3D Diffusion models**: Researched generation of 3D models using latent diffusion models.

PROJECTS

- **AAA-py**: Rewrote the build system for Arcane Algorithm Archive, an online book on algorithms. It has been used since 2018.

- **draft360**: Built the webXR frontend for draft360, a virtual and augmented reality storyboarding tool. Won a $3500 prize at the 2020 MIT Reality Hack hackathon.

- **Golden Transformer**: Fine-tuned dozens of transformers on the Russian SuperGLUE benchmarks and combined them into an ensemble to achieve state-of-the-art performance in 2021. This project won a 500,000 prize in the National Technology Olympiad in AI.

- **Video generator**: Collaborated on a project that generates videos from text descriptions using generative AI. Won a 500,000 prize in the AI International Junior Contest.

- **MindEye**: Applied retrieval from a web image dataset for improving image generation quality for MindEye, a system for generating images from fMRI brain scans. Spotlight paper at NeurIPS.

SKILLS

- **Python**: Built APIs with Flask and FastAPI. Processed EEG data with OpenMNE.

- **ML**: Fine-tuned and trained transformers with PyTorch. Used Jax for fine-tuning small image transformers and optimization research on small data.

- **C#**: Developed 10+ games in Unity. Wrote VR applications with StereoKit.

- **Typescript**: Worked on small websites with React, Next.js and Svelte. Developex webXR apps apps using AFrame.

- **Kotlin, Go, C++**: Wrote side projects like ray tracing renderers, neural network libraries, a virtual machine GUI and a reinforcement learning environment.

Objective Statement

I am looking for a part-time internship as an ML Engineer or Research Engineer.

Honors/Awards

- **Non-Trivial Fellowship**: Finalist

- **Atlas Fellowship**: Finalist