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Mapbox
Germany

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Application for Software Development Engineer II, 3d Graphics

Dear Mapbox Team,

I am thrilled to apply for the Software Development Engineer position on your 3D graphics team and to contribute to your innovations in visualization, graphics algorithms, and performance optimization. With a background in games engineering and a specialization in machine learning for real-time interactive systems, I am passionate about solving complex challenges in graphics programming, advancing real-time performance, and simplifying intricate software architectures.

In my Bachelor's studies, I built a game engine from scratch using C++ and OpenGL, gaining firsthand experience in rendering fundamentals and high-performance graphics. This project solidified my passion for real-time interactive systems and led me to tutor a game engine development course, where I honed my technical communication skills by helping new students grasp core rendering concepts.

For my Master's degree, I specialized in artificial intelligence, merging this focus with my love for graphics in my thesis project. I developed a neural network for real-time rendering super-resolution, which enhanced resolution, framerate, and quality, contributing to a smoother user experience. This project taught me valuable lessons in integrating machine learning with real-time systems—a skill that I believe would bring unique value to Mapbox's work in advancing 3D visualization and interactivity. Additionally, my coursework and projects allowed me to build strong version control practices and task management skills, supported by a structured, analytical approach to problem-solving. My best grade in "Computational Geometry" and my published research, "Analysis and Generation of Flow in 3D Jump'n'Run Games," which I presented at the Conference on Games in Milan, demonstrate my commitment to rigorous, methodical work.

Though I am new to Vulkan and TypeScript, I am an enthusiastic and quick learner. My technical foundation in C++, OpenGL, and machine learning, combined with my dedication to growth, will allow me to quickly gain proficiency in these areas and contribute to your team's success.

I am excited about the opportunity to join Mapbox, contribute to your 3D graphics team, and help push the boundaries of what's possible in real-time visualization. Thank you for considering my application; I look forward to discussing how my experience and ambitions align with Mapbox's goals.

Sincerely,



Tobias Brandner