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September 28, 2025

I am writing to express my enthusiasm for the Senior Software Engineer position at TechCorp. With a dual master's degree in Applied Mathematics and Data Science from Ecole des Mines and the University of Lorraine, I have spent the last five years building scalable, data driven applications that combine rigorous research with practical engineering. My background in full stack development, coupled with deep experience in cloud native architecture, aligns closely with the technical and collaborative culture that TechCorp champions.

During my recent internship at STMicroelectronics, I designed and deployed a production ready convolutional neural network that accelerated semiconductor radiation simulations by a factor of ten. This project required end to end responsibility for data ingestion, model training on Nvidia H100 clusters, and deployment through FastAPI and Docker on AWS. The same experience honed my ability to translate complex scientific problems into clean, maintainable code while meeting strict performance targets—skills that are directly applicable to building the high availability web services you describe.

My professional portfolio also demonstrates proficiency in JavaScript, TypeScript, and React, which I used extensively while creating dynamic dashboards and automation workflows for a freelance web scraping platform. These projects involved designing responsive UIs, implementing RESTful APIs with Node.js and Express, and integrating CI/CD pipelines in GitLab to streamline deployments. I have repeatedly mentored junior developers on best practices, code review, and architectural decisions, ensuring that teams deliver reliable, scalable solutions.

I am particularly excited about TechCorp's focus on AI powered solutions. At RMIT University, I adapted a classical incremental learning algorithm into a quantum variant within a PyTorch MLOps framework, publishing a paper on the IEEE platform. This work reinforced my passion for blending cutting edge research with software engineering, a philosophy that I would bring to your product and design teams.

I am confident that my blend of research rigor, full stack expertise, and a proven track record of mentoring and architectural leadership will enable me to contribute immediately to TechCorp's ambitious projects. I look forward to the possibility of discussing how my background and enthusiasm can help drive innovation and deliver outstanding user experiences for millions of TechCorp customers.