COVER LETTER

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Hiring Manager
R2 Industries

Dear Hiring Manager,

I am writing to express my enthusiastic interest in the Software Developer Intern position at R2 Industries, as part of the SkIP Summer Program. As a Master's student in Computer Science at Washington University in St. Louis with a strong foundation in Python, Artificial Intelligence/Machine Learning, and software development, I am eager to contribute to the development of cutting-edge laser systems for semiconductor manufacturing.

My resume details extensive experience in developing complex software solutions using Python. For instance, in my project on Datacenter Cooling Optimization, I implemented multiple Deep Reinforcement Learning algorithms (DDQN, PPO, SAC) in Python, integrated with EnergyPlus simulations, achieving a significant 35.8% energy efficiency improvement over baseline. My research on Multimodal Alzheimer's Disease Prediction further demonstrates my ability to leverage Python with libraries like TensorFlow/Keras and Scikit-learn for sophisticated data processing and predictive modeling, including deep learning for image analysis.

R2 Industries' encouragement of using ML/AI techniques strongly resonates with my background. My coursework and projects in Deep Learning, AI for Health, and Reinforcement Learning have equipped me with practical skills in applying these techniques to solve challenging problems. I possess the required strong Python programming skills and have a keen interest in hardware control and the intersection of software with physical systems, sparked partly by my experience working with IoT data streams and optimizing simulated physical environments like datacenters. I am excited by the opportunity to develop software spanning computer numerical control, machine vision, and user interfaces, and to test my code directly on R2 Industries' laser hardware.

Furthermore, my experience developing user interfaces using frameworks like Vue.js (Interactive Storybook project with OpenAI API integration) and React (Data Analyst Internship software) aligns well with the UI development aspect of this role. I am a proactive problem-solver, adaptable learner, and effective collaborator, confident in my ability to quickly contribute to your team's goals.

Thank you for considering my application. I am very excited about the possibility of applying my skills to R2 Industries' innovative technology this summer and am eager to learn more about this opportunity. I welcome the chance to discuss my qualifications further in an interview.

Sincerely,

Aadarsha Gopala Reddy