Mory Gharasuie March 23, 2025

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DeepSig Inc,

Arlington, VA , USA

**Dear Hiring Team,**

I am writing to express my strong interest in the Machine Learning Intern position at DeepSig. As a PhD candidate in Computer Science at Old Dominion University , my research focuses on machine learning (ML), self-supervised learning semi-supervised learning (SSL), natural language processing (NLP), working with tabular, text and image data. I am excited by DeepSig’s mission to transform wireless communication systems with AI-driven solutions and believe my background aligns well with your requirements.

During my time at Old Dominion University, I have worked extensively with TensorFlow, PyTorch, scikit-learn, and other ML libraries. My coursework and research projects have equipped me with a strong understanding of core ML concepts and algorithms, including classification, data preprocessing, and model optimization. Beyond these fundamentals, my recent research centers on improving ML/DL models for classification of extreme class imbalance datasets (aka long-tailded datasets), which can be translated well into designing and optimizing new models. Additionally, I have developed applications leveraging large language models (LLMs), focusing on retrieval-augmented generation (RAG) systems, embedding models, fine-tuning techniques, and recent methods for improving the performance of applications using LLMs. These projects demonstrate my ability to handle data collection, cleaning, and advanced analytics while contributing innovative solutions to the broader ML community.

Prior to starting my PhD, I served as a software developer at Royan Communication Company, where I customized web-based administration interfaces for various server technologies (e.g., chat server, FreeRadius server, Elastix). This role introduced me to diverse communication systems, enhanced my problem-solving abilities, and fostered a strong sense of collaboration when working with cross-functional teams. While my direct experience with wireless communications is limited, I am eager to leverage my background in ML, programming (Python, Java, C++), and problem-solving to support DeepSig’s goals and expand my knowledge of wireless signal processing.

What excites me about this internship is the opportunity to contribute to practical, AI-powered wireless solutions while collaborating with a forward-thinking team. Your focus on building machine learning solutions for wireless communication systems resonates with my passion for applied research and model development. I also value DeepSig’s inclusive small-team culture, which fosters creativity, agile collaboration, and continuous learning—qualities that drive my own growth as a researcher and engineer.

Thank you for your time and consideration. I would welcome the chance to discuss how my experience and enthusiasm for machine learning can contribute to DeepSig’s cutting-edge work. Please feel free to contact me at any time via email or phone.

Sincerely,  
**Mory Gharasuie**