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Lawrence Tsai

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Dear Hiring Manager:

I am thrilled to apply to work for you as a New Grad starting in January or February 2024. Graduating in December 2023 from the University of Toronto with a major in Math and Physics and a minor in Computer Science, I am eager to utilize what I have learned and showcase my further learning to you.

I am currently working as a Software Engineer Intern at Capital One, where I am part of the Payments Intelligence team. In this role, I am working on the migration of our cache from Redis to DynamoDB to facilitate in annual savings of over \$100,000. I am working with a gRPC API that interfaces with our machine learning model while leveraging various AWS tools such as DynamoDB, EC2, ECS, Fargate, S3, Boto3, and ElastiCache. For an application handling over 180 billion transactions each year, this experience is allowing me to deepen my knowledge of scalable systems and hone my skills in utilizing cutting-edge technologies.

I am also a ML Research Assistant at the Cognitive Neuroscience & Sensorimotor Integration (CoNSens) Laboratory at the University of Toronto. I am utilizing ML to understand the neuroscience of the Dorsal and Ventral Streams. With a focus on human grasp point determination and object recognition, my work involves exploring explainable convolutional neural networks (CNNs) and analyzing EEG data. Through this research, I am investigating the optimization strategies employed by these two streams, aiming to understand their differences beyond initializations. This experience allows me to use my previous University studies in Biology & Chemistry with my current aspirations in tech that fits my holistic way of thinking.

During the school year, I was given a unique experience in technology as an IT Support Assistant for three biological departments at the University of Toronto. In a division of 4 people, I was given a large responsibility in maintaining the integrity and efficiency of our critical systems as well as creating new embedded systems for the departments.

During my internship at Promise Robotics, a seed-stage startup, I gained invaluable exposure to cutting-edge technology and the excitement of building upon proof of concept. Working on automating construction using robots, I collaborated on preprocessing CAD models, designed algorithms for robot sequencing, and implemented machine learning techniques to optimize the process. Additionally, I played an integral role in enhancing the security of the API. Most notably, I was able to apply Quaternion mathematics to sequence irregular shapes in roofs and windows.

Aside from professional experience, I am a Senior Strategy Engineer at Blue Sky Solar Racing where I optimized the construction, telemetry, and performance of our solar car for international competitions. As a member of the UofT Aerospace Team's Space System Division's Optics Team, I perform numerical analysis and conduct research on grisms and holographic gratings for our satellite payload. The payload will be integrated into a hyperspectral imaging CubeSat to measure anthropogenic gas emissions across Ontario in 2025. Moreover, I have developed several projects, including a webcam diagnostic tool for diagnosing strabismus in collaboration with researchers at the University of Calgary and a friend-making web app called Amigos deployed on Azure, showcasing my technical abilities in computer vision and web development.

Thank you for considering my application. I would welcome the opportunity to discuss how my qualifications align with your team's needs in greater detail.

Sincerely,
Lawrence (Larry) Tsai