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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 aptitude for further learning to you.

I recently was a Software Engineer Intern at **Capital One**, where I was a part of the Payments Intelligence team. In this role, I was working on the migration of our cache from Redis to DynamoDB to facilitate in **annual savings of over $100,000**. I was working with a **gRPC API** that interfaces with our ML model while leveraging various **AWS** tools such as DynamoDB, EC2, ECS, Fargate, S3, Boto3, and ElastiCache. For an application handling **over 260 billion transactions each year**, this experience allowed me to deepen my knowledge of scalable systems and hone my skills in utilizing cutting-edge technologies. At the end of the internship, I placed 1st out of 36 teams in our internship hackathon by creating a Slackbot to summarize messages using **NLP** and **ML**.

During my prior internship at Promise Robotics, a **seed-stage startup**, I had 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.

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 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.

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.

Additionally, I am also furthering my learning in **Finance** including being **Bloomberg Market Concepts** certified and self-learning in my free time. I am a light-hearted ENTP character with a unique perspective. If there is ever something that I do not know, I **guarantee** that I can **learn it and demonstrate that to you**. 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