KEVIN LIANG

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EDUCATION

Master of Applied Science in Electrical and Computer Engineering **Sep 2025 – Apr 2027**
University of Toronto *Toronto, Ontario, Canada*

- **Advisor:** Prof. Lacra Pavel

Bachelor of Applied Science in Mathematics and Engineering with Professional Internship **Sep 2020 – Apr 2025**
Queen's University *Kingston, Ontario, Canada*

- **Awards:** First Class Honours, Science '66 Memorial Prize, Mildred K. Walters Awards

PROFESSIONAL EXPERIENCE

Product Management Analyst **Sep 2023 – Aug 2024**
RBC Capital Markets – Electronic Trading Product Management Desk *Toronto, Ontario, Canada*

- Implemented, tested, and deployed 30+ custom trading algorithms per month for clients in NA and EMEA equities markets
- Pitched, developed, and productionized an internal analytics web platform using Flask to process and analyze client and algorithm data for insights. Used by 20+ members across management, product management, and client coverage teams
- Collaborated with FIX engineers and sales trading teams to implement 10+ A/B tests to improve algo performance
- Debugged and resolved 20+ algorithm issues in production environment for clients in Canadian and US markets
- Wrote and deployed 4 Python automation scripts to generate analytic reports, saving team members 2+ hours daily

Summer Research Student **May 2022 – Aug 2022**
Reactor Materials Testing Laboratory *Kingston, Ontario, Canada*

- Worked under Prof. Mark Daymond at the RMTL to research the effects of particle radiation on various metals, simulating reactions inside nuclear reactors via a proton and helium particle accelerator
- Optimized and programmed features of a beam energy activity calculator with Java and SQL, reduced output error from more than 50% to less than 20% using a new algorithm based on Riemann approximation
- Scripted a SRIM/TRIM automation software and an energy optimizer with Python to conduct uniform helium beam research, minimized calculation error to 5% and reduced time to perform ion irradiation experiments with a particle accelerator
- Generated 3 technical reports and relevant software documentation to include in research publications

Robotics Engineer – Special Projects **May 2021 – Aug 2021**
Wizrobotics *Richmond Hill, Ontario, Canada*

- Managed a team of 3 to create a new summer school program that taught Roblox Lua and attracted 20+ customers
- Developed 4 teaching curriculums for Thunkable, Code.org, Roblox Lua, and App Inventor using Twine
- Taught daily robotics and programming lessons to children at elementary and secondary school levels

EXTRACURRICULAR EXPERIENCE

Co-Captain, Logistics Lead **Apr 2023 – Mar 2025**
Queen's Aerospace Design Team *Kingston, Ontario, Canada*

- Co-Led 120+ members across 3 branches to design, build, and test autonomous drones to compete in 3 international competitions in North America
- Founded the team's research and development branch, created 2 research projects related to hydrogen-powered aircraft and plasma actuators for aerodynamics applications
- Reached research paper acceptance at the IMAV conference and finalist for the AEAC Student Paper Call Award in 2025
- Rebranded team assets using Figma and expanded team headcount from 60+ to 120+
- Won the Internal Award at Queen's Engineering Society Design Team Awards 2025
- Built sponsorship packages and budgeting infrastructure to acquire and manage over $30,000 CAD of funds

Senior Project Manager, VP of Technology, Project Manager **Mar 2022 – Mar 2025**
Queen's Startup Consulting *Kingston, Ontario, Canada*

- Managed a team of 6 technical and business consultants to provide solutions and deliverables to a women's boxing brand founded by a NEXT Founder

- Processed 2,000+ historical and real-time data points to apply Linear Regression, XGBoost, and LSTM models to predict future sales and reduce inventory risks
- Hosted workshops and trained consultants to predict future sales using machine learning and time series prediction methods
- Analyzed marketing channels, partnerships, and sales data from Google Analytics and Triple Whale to propose data-driven decisions for client meetings

PD Workshops Chair, Discipline Club VP of External, EngPal Mentor, First Year Representative **Oct 2020 – Mar 2025**
Engineering Society at Queen's University *Kingston, Ontario, Canada*

- Mentored a total of 5 first-year engineering students through the EngPal program as an upper year mentor
- Elected to represent first year students and later the Mathematics and Engineering program
- Partnered with faculty corporate relations team to host 10+ professional development workshops for undergraduate engineering students

Director of UI/UX, UI/UX Designer, Software Developer **Mar 2021 – Mar 2024**
Queen's Technology and Media Association *Kingston, Ontario, Canada*

- Collaborated with 3 developers to develop features of Kartt, a web browser extension that retrieves and displays the actual costs of products sold online using AWS Lambda, Amazon EC2, Python, HTML, CSS, and JavaScript
- Programmed the frontend features of Loco, a mobile application that helps students find the best tourist destinations recommended by locals, as a team of 4 developers using React Native and Expo
- Pitched final product and won 1st place at the annual product competition co-hosted by McKinsey & Company in 2023
- Designed and prototyped front-end features with Figma and Adobe Creative Cloud (Photoshop & Illustrator), and used Git to handle version control and development collaborations
- Created 4 pitch decks and relevant branding assets for mid-season and final product competitions

Advisor, Co-Captain, Chassis Manager, First Year Representative **Sep 2020 – Nov 2024**
Queen's Hyperloop Design Team *Kingston, Ontario, Canada*

- Co-Led 160+ members and managed 7 projects to build Hyperloop pods, produce research papers, and design tunnel boring machines to compete in 2 international competitions in North America and Europe
- Founded the team's research and development branch, oversaw 3 research projects and presented 2 research papers at European Hyperloop Week 2023
- Designed 50+ marketing assets and social media posts using Figma, growing membership count from 18 members in 2022 to 167 members in 2023
- Ranked 1st at North American competition (3 category awards) and published (3 research papers) at European competition in 2023
- Ranked 1st at North American competition (5 category awards) and won major award (socio-economic research) at European competition in 2024
- Hosted 20+ internal and partnered workshops as part of HyperloopPD, the team's independent student-run professional development program that connects alums with active members
- Created budgeting infrastructure using Microsoft Excel to acquire and manage over $80,000 CAD of funds from 6 sponsors

RESEARCH PROJECTS

Undergraduate Thesis **Sep 2024 – Apr 2025**
Engineering Math Project (MTHE 493), Queen's University *Kingston, Ontario, Canada*

- **Thesis Title:** Speech Decomposition using the Variational Information Bottleneck Method
- **Advisor:** Prof. Fady Alajaji
- Modified the SPEECHSPLIT model to apply the Variational Information Bottleneck (VIB) method, improved performance of speech decomposition process for timbre and pitch components
- Conducted literature review on information bottleneck methods and regularly presented findings to advisor

Technical Research Paper **Sep 2022 – Jul 2023**
European Hyperloop Week 2023 *Edinburgh, Scotland, United Kingdom*

- **Paper Title:** Mounted Machine Learning Camera System for Object Detection and Track Tracing During Hyperloop Operations
- **Access Link:** https://bit.ly/3Zl8PIn
- Led a team of 6 members and 5 control groups of engineering students to investigate machine vision applications for Hyperloop pods using models such as YOLO and FOMO, as well as camera configurations suitable for Hyperloop operations
- Produced research poster, presentation deck, and prototypes for demonstration of results

- Published and presented at European Hyperloop Week 2023, the largest Hyperloop conference in the world, hosted by the University of Edinburgh

Socioeconomic Research Paper **Sep 2022 – Jul 2023**

European Hyperloop Week 2023 *Edinburgh, Scotland, United Kingdom*

- **Paper Title:** Socio-Economic Research and Analysis of TransPod and Various Hyperloop Projects Around the World
- **Access Link:** https://bit.ly/3XX9Gyv
- Organized a team of 10 members to investigate the feasibility of various on-going Hyperloop projects around the world through literature review and statistical analysis, as well as determine tactics to strengthen project outcomes and sustainability
- Produced research poster and presentation deck for showcase of findings
- Published and presented at European Hyperloop Week 2023, the largest Hyperloop conference in the world, hosted by the University of Edinburgh

SCHOLARSHIPS & AWARDS

McCall MacBain Scholarship, McCall MacBain Scholars **Apr 2025**

- Awarded alongside MSc (Thesis) Computer Science offer at McGill University for excellence in leadership, academics, and community service. Declined to pursue MASc ECE at the University of Toronto

Queen's Engineering Competition 2024 Programming Challenge Third Place, Queen's Engineering Competition **Nov 2024**

- Awarded for building and pitching Food FAIght, a web application powered by OpenCV and OpenAI API that gamifies healthy cooking to help combat obesity

WebStraw x DDQIC AI & Technology in Education Case Competition 2024 First Place, Webstraw Queen's **Apr 2024**

- Worked as a team of 4 to design and pitch CoLearn, an AI-powered notetaking and test preparation web platform designed to make studying more accessible and cheating less desirable

QHacks 2024 Best Use of Theme, QHacks IX **Feb 2024**

- Awarded for building and pitching Journey, an OpenAI-powered application that allows users to interact with fictional characters and creatures as they progress through books

Frank Maine Innovation Initiative Case Competition 2023 First Place, Fulcrum Technology Holdings **Nov 2023**

- Awarded for pitching the best business idea involving US telecommunication companies to a panel of corporate judges

Canadian Hyperloop Conference 2023 Leadership Award, Hyperloop Global **May 2023**

- Awarded for leading Queen's Hyperloop Design Team, the top ranked team at Canadian Hyperloop Conference 2023, throughout the 2022 - 2023 season

QTMA x McKinsey & Company Product Demo Day 2023 First Place, Queen's Technology and Media Association **Mar 2023**

- Awarded for building and pitching Kartt, a web extension that shows the actual cost of any product before going to checkout

Science '66 Memorial Prize, Engineering Society at Queen's University **Mar 2023**

- Awarded for contributing the most to engineering extracurricular activities during my first 3 years at Queen's

Ontario Engineering Competition 2023 Programming Challenge Third Place, Ontario Engineering Competition **Jan 2023**

- Awarded for designing, programming, and pitching CareFull, a web-based application that provides immediate Healthcare services recommendations to users based on their circumstances

QHacks 2023 Overall Second Place, QHacks VIII **Jan 2023**

- Awarded for designing, programming, and pitching Pitch Perfect, an OpenAI-powered tool that generates slide decks based on a prompt, a logo idea, and the desired presentation length

Queen's Engineering Competition 2023 Programming Challenge First Place, Queen's Engineering Competition **Jan 2023**

- Awarded for designing and pitching SamePage, a mobile social media and book app for book readers with features powered by machine learning using Figma

Mildred K. Walters Awards, Queen's University **Dec 2022**

- Established from the estate of Mildred K. Walters and awarded to undergraduate students in any faculty or school at Queen's University on the basis of financial need and academic achievement

CalgaryHacks 2022 Best Use of Cloud Computing, CalgaryHacks 2022 **Feb 2022**

- Awarded for designing, programming, and pitching ReLeaf, a machine learning-based web application that helps people de-stress and prepare for interviews

Queen's Capture the Flag 2021 First Place, Queen's CTF **Nov 2021**

- Awarded for Achieving the highest score by solving the most problems in the 2021 Queen's Capture the Flag Cyber & Information Security Competition

TECHNICAL SKILLS

- **Programming:** Python, MATLAB, C++, C, Java, HTML, CSS, JavaScript, SQL, kdb+/q, VHDL, Assembly
- **Tools:** MS Excel, MS Words, MS PowerPoint, Jira, Jenkins, Git, Flask, Selenium, OpenCV, TensorFlow, MongoDB, Express.js, React.js, React Native, Node.js, Bootstrap, Expo, Maple, LaTeX
- **Design:** Figma, Adobe Creative Cloud, SOLIDWORKS CAD

ADDITIONAL INFORMATION

- **Languages:** English (Native), Mandarin (Native)
- **Interests:** Books, painting, chess, board games, and finding the best truffle fries in the world