# Abiel J. Kim

+1 778-867-2057 || *North Vancouver, BC* || *abielkim.tech@gmail.com*
*abielkim.vercel.app* || *linkedin.com/in/abiel-source* || *github.com/abiel-source*

## Education

**Bachelor of Science** | ***Major: Computing Science, Concentration: Artificial Intelligence*** April 2025
Simon Fraser University Burnaby, Canada

## Work Experience

**Machine Learning Engineer, Founding Team** February 2025 – September 2025
MICA Technologies – *mica.technology* Remote

- Boosted classification accuracies of large petrographical deep learning models for thin-section grain analysis
- Conducted client requirements elicitation sessions to pinpoint workflow bottlenecks and technical insights

**Full Stack Software Developer** May 2022 – August 2022
3AG Systems Burnaby, BC

- Developed production-grade UI modules and integrated business logic for API handlers over the full stack
- Debugged both client-end and server-side tickets to optimize UX and adhere to functional requirements
- Collaborated with senior leadership and SVP Andry Layarda to deliver critical features by Scrum deadlines

**Technical Project Manager Co-Op** September 2021 – April 2022
Arlo Technologies Inc. Richmond, BC

- Verified and evaluated firmware builds, and modified/soldered PCB circuits of internal and external products
- Assisted in program oversight, logistics operations, and delegation of tasks in a big tech environment
- Coordinated with teams and leadership in FW, Director of SW Lei Wang, HW, and Director of HW James Cao

## Publications and Research

**A Special Case of Nonlinear Extrapolation under the Neural Tangent Kernel** December 2025
Independent Research, *arXiv*

- Pioneered a novel theory which states that wide ReLU predictors can extrapolate quadratically at the origin
- Devoted several months of rigorous work to contribute ambitious mathematical insights *(link)*

**A Data Scaling Law of a Manifold's Resolution** Spring 2025
Simon Fraser University, *CMPT 419 Special Topics in Artificial Intelligence*

- Theorized a *neural scaling law* (class topic) on the observed power-law of data scaling and neural network loss
- Earned an A+ submission with feedback from academics at the University of Illinois Urbana-Champaign
- Recognized for exceeding project expectations and delivering one of the top submissions in Spring 2025

## Projects

**Personal Portfolio Website** | ***React, JavaScript, Vite, Vercel*** December 2025
Independent Project

- Designed and Developed a responsive web application in React.js to showcase my personal brand
- Modeled after leading industry platforms for desktop, tablet, and mobile view *(link)*

**EEG-Based Interactive Brain-Computer Interface** | ***OpenBCI, Tensorflow, Python*** Summer 2021
Independent Project

- Trained a Sequential Neural Network to classify brain waves in the form of EEG (electroencephalography)
- Extracted EEG non-invasively using the mark IV OpenBCI 8-channel headset, Cyton board, and USB dongle
- Operated the EEG headset to demonstrate "synthetic telepathy" with publicly available video demonstrations

**Replica of YouTube's Content Summarization and Topic Extraction Model** | ***Hugging Face*** Spring 2025
Simon Fraser University, *CMPT 713 Natural Language Processing*

- Designated team lead who designed and engineered a dynamically-clustered topic-summarization pipeline
- Finetuned and deployed both *Meta BART* and *Google T5* text-to-text transformers for a comparative evaluation

**Deep Learning for Ovarian Cancer Subtype Classification** | ***PyTorch, Kaggle*** Spring 2025
Simon Fraser University, *CMPT 340 Biomedical Computing*

- Designated team lead, spearheading the design and development phases and directing team coordination
- Trained an image classifier for early stage diagnosis of 5 cancer subtypes on histopathological images

**Plagiarism Detection Using Language Recognition Tools** | ***Java, ANTLR, Tree-sitter*** Fall 2024
Simon Fraser University, *CMPT 473 Software Testing, Reliability & Security*

- Conceived an original winnow algorithm to detect plagiarism of Java source code via AST frameworks
- Architected a modular, end-to-end pipeline and packaged it as a statistics-analysis web application

**BGC Inventory Store** | ***Javascript, PostgreSQL*** Summer 2021
BGC Engineering Inc., Simon Fraser University

- Designated team lead for the design and implementation of the ER and Relational Database Schema
- Communicated extensively at the intersection of Agile development and Requirements Engineering

**Gravitational N-Body Simulation Engine** | ***OpenGL, C++*** June 2021
Independent Project

- Engineered a numerically-stable physics engine and Euclidean graphics simulation of a dwarf galaxy
- Allows users to travel through space and witness the gravitational forces acting upon stellar objects

**Lightweight Real-Time Messaging Platform** | ***PHP, jQuery*** May 2021
Independent Project

- Programmed a full-stack messaging website using just vanilla PHP, Sockets, and a minimal backend
- Demonstrated proficiency in the development and maintenance of real-time full-stack applications

**Terroristic Text Detection System** | ***Scikit-learn, pandas*** July 2021
Independent Project

- Processed hundreds of custom keywords to train a Bayesian model to detect hostile natural language
- Leveraged Scikit-learn to vectorize and reformulate document unigram counts as a Bayesian MLE problem

## Honors and Awards

**Dean's Honour Roll (3x)** Spring 2021, Fall 2024 – Spring 2025
Recognition of Outstanding Academic Excellence at Simon Fraser University

**Regional Individual Writing Tournament** April 2017
2nd Place – *World Scholar's Cup*

**International / Regional Debate Tournament (4x)** October 2016 – March 2017
2nd Place – *CAIMUN*, *VMUN*, *BMUN*, 3rd Place – *NVMUN*

**Western Canadian Business Case Competition** February 2017
Finalist – University of British Columbia *miniEnterprize*

## Leadership and Involvement

**Founder and President** September 2015 – June 2018
Carson Graham Programming Club

**Vice President of IT** March 2017 – June 2017
Wish Youth Network Society

## Other Work Experience

**Sales Associate, General Clerk** June 2018 – April 2019
Miniso North Vancouver, BC

**Piano Instructor** February 2017 – April 2018
4D Studios West Vancouver, BC

## Skills

**Languages**: English (Native), Korean (Proficient), French (Limited Proficiency)
**Programming**: Bash, C/C++, Java, React, Javascript, MATLAB, PHP, Python (NumPy, TensorFlow, PyTorch)
**Document Creation**: LaTex, Microsoft Office Suite, Markdown