Kavishka Bartlett

Rowland Heights, CA 92701 | (714) 913-0812 | kavishka.bartlett@duke.edu

EDUCATION

Duke University | *B.S. in Electrical and Computer Engineering | B.S. in Computer Science | Minor in Mathematics* **August 2022 – May 2026**
Concentration in Machine Learning and Artificial Intelligence Durham, NC

- **Relevant Coursework:** Probability; Proof-Based Linear Algebra, Multivariable Calculus, Differential Equations, Space Systems Design, Thermofluid Dynamics, Quantum Computing, Computer Architecture
- **Involvements:** Orientation Leader, Duke Aero, Duke Combat Robotics, Duke SEDs, Rowing, Tennis, Alpha Tau Omega Chapter
- **Fall 2024:** University of Sydney Study Abroad, Financial Management Association of Australia, USYD Network for Investing and Trading

Foothill High School | *International Baccalaureate Diploma* **August 2018 – May 2022**

- **Awards:** 1530 SAT; AP Scholar with Distinction (took 14+ AP/IB courses); 7 Awards of Excellence in Calculus, Chemistry, Choir, Symphony; Deans High Honor Rolls every semester, Santa Ana, CA
- **Leadership:** Led meetings as VP of National Honor Society, managed 1500+ students and 100+ tutors as VP of Knights for Knowledge tutoring, organized 40+ people projects as California Scholarship Federation Project Manager, VP of Stocks and Investments Club

Orange County School of the Arts | *Vice-Principal Bassist* **August 2017 – May 2018**

- **Involvements:** Assistant Principal Bassist in the Symphonic Orchestra; performed at Lincoln Center, NY after winning 2nd place in the American Fine Arts International Festival; competed in flamenco, classical, and electric guitar; created a drawing collection

WORK EXPERIENCE

RBC Bearings | *Automation, Electrical, and Mechanical Engineering Intern* **Summer Internship May 2024 – August 2024**

- Used Ignition (SCADA system) to wirelessly access, analyze, manipulate, and present gaging measurement data in an independent project
- Coded, troubleshot, and handled daily setup for 6 Fanuc robots, using Wago boards and DraftSight to organize data connections/wiring
- Worked with highly specialized and precise aerospace bearings unique to ITB, designed custom 3D-modeled parts using SolidWorks, coded original programs to test the viability of flight-critical bearings (torque, load capacity, friction, vibration, etc.)

SOS Tutoring LLC | *Founder, Financial and Marketing Manager, Scheduling Coordinator, Tutor* **CEO November 2019– July 2022**

- Founded SOS Tutoring in 11th grade after identifying a demand for affordable tutors Tustin, CA
- Attracted business by hiring young tutors lacking job opportunities, charging consumers low rates, and collecting small cuts from tutors
- Managed yearly financial (~15K), marketing, and scheduling strategies and optimized operations during Covid-19 (virtual tools)

Banana Republic/Old Navy | *Lead Cashier, Floor Lead.* **Summer Employment 2020 – 2023**

- Became head cashier after breaking the record for the most Old Navy credit card sign-ups generated in a single shift

PROJECTS AND EXTRCIRRICULARS

GitHub Repository for All ECE/CS Projects with README files: https://gitlab.oit.duke.edu/kpb29/2025-ece-and-cs-portfolio

Computer Science | *Coded in C, Python, MIPS Assembly, Java* **August 2021 – May 2023**

- C Program: LRU cache logic (store/load commands as inputs), Multi-Level Queue Dispatcher with Round Robin and starvation prevention, multithreading and concurrency, programmed threads to run simultaneously (parallel synchronization) with conditional variables mutexes,
- MIPS: Wrote programs implementing recursion, iterative, memory management algorithms to run on custom, personally built 16-bit CPU
- Java Programs: US highway route planning algorithm optimizing distance, algorithms to autocomplete words based on prefixes, Huffman compression and decompression, Markov models predicting word sequences, multiplayer video game with audio and visual effects
- Worked with searching algorithms (BFS, DSF), Big O runtime efficiency, virtual memory, paging, recursion, translation buffers

Engineering **August 2021 – May 2023**

- Built a fully functioning 16-bit CPU in Logisim, complete with adders (for mathematical computations), registers, data control logic, CPU instruction decoding for 16 unique MIPS instructions, ability to run all self-authored MIPS assembly language programs
- Built a Moore finite state machine containing fully functional vending machine logic
- Built/coded custom robots that could follow lines, detect physical properties, communicate with external computers, generate audio signals
- Designed and constructed a 7.5-foot vehicle as part of a local project meant to move large irregularly shaped boulders from farmland
- Writing custom CFD code to solve differential fluid flow equations, working with Duke Aeroelasticity Research to publish/present papers

Duke Aero and Duke Combat Robotics **January 2024 – Present**

- Designing and building liquid rocket engine for Duke Aero with the goal of competing in Spaceport America Cup
- Designing and building weapons for combat robots by optimizing bite efficiency, moment of inertia, and material distribution
- Prototyping a drivetrain with custom soldered circuits, motors, radio transmitters, and 3D-printed chassis accounting for gyroscopic effects

Orientation Leader for Duke Project Play **June 2023-August 2023**

- Volunteered to become a leader for Duke's Orientation program Project Play (150+ students), spent 2 weeks training, orientating freshmen

Alpha Tau Omega | *Alumni Chair, Merch Chair, Finance Manager* **January 2023 – Current**

- Managed 2,000+ alumni network, organized networking events, handled communications, created newsletters, managed finances (~120K)

SKILLS & INTERESTS

- **Skills:** Coding Languages **(**Java, C, MIPS, Python), Engineering Design Software (Inductive Automation, Logisim, SolidWorks, DraftSight)
- **Interests:** Play 10+ instruments, been to all 50 states, hiking, tennis, theoretical astrophysics (wrote papers on quantum mechanics, parallel universes), Interstellar, surfing, drawing (TinTin), Lakers, Fantasy sports, politics (wrote papers analyzing modern populism, the courts)