Max Vink

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EDUCATION

University of California, Berkeley B.S. Computer Science and B.A. Political Science | GPA 3.712/4

- **Extracurriculars:** Political Computer Science @ Berkeley (Developer), Telegraph for People (Founding Member), Cal Cycling (Board Member)

EXPERIENCE

UC Berkeley Embodied Dexterity Laboratory **Berkeley, CA**

Lab Intern *November 2024 – December 2024*

- Implemented a circuit for solenoid actuation of positive pressure into the lab robot's suction cup end-effector
- Improved the lab's haptic feedback search runtime by 25% by reducing dragging during search with positive pressure

Southern California Edison **Pomona, CA**

Machine Learning Intern *May 2023 – August 2023*

- Modeled heatwave overload on distribution transformers for Southern California with 85% accuracy
- Deployed model to perform risk analysis & outage forecasting, bettering ignition prevention & resource allocation effort
- Created methodology for normalizing weather by creating precision-focused, accuracy-optional ignition modeling, which was discovered to be applicable for companywide goalsetting & effort-quantification

UC Berkeley Engineering Department **Berkeley, CA**

CS61A, CS61B, CS61C CS70, Math1A, Math54, CS161 *January 2023 – January 2025*

- Staff 2 weekly office hour tutoring sessions to help 30+ students learn computer science languages and fundamentals
- Led weekly conceptual review sessions for data structures and object-oriented programming basics

Political Computer Science @ Berkeley **Berkeley, CA**

Parolee Recidivism - Data Scientist and Researcher *August 2022 – December 2022*

- Modeled parolee recidivism without leveraging race data, ensuring fair predicted risk (contrary to industry models)
- Achieved 75% accuracy with balanced confusion matrices between race, surpassing deployed judicial system models

FoodWatch -- Machine Learning Design Team Lead *January 2024 – May 2024*

- Modeled geospatial food scarcity from open-source satellite imagery, OpenStreetMap, economic, & weather data with 72% accuracy, hoping to aid developing territories in identifying supply chain weaknesses and food deserts

UC Berkeley EECS Department **Berkeley, CA**

Course Staff – CS61A: Introduction to Computer Programs *January 2023 – May 2023*

- Led 30+ students in weekly labs geared toward learning object-oriented Python, Scheme, and SQL skills
- Created course content, presented weekly material recaps, and debugged projects in a team with 10 other TAs

Mike's Bikes Cannondale Cycling Team **San Jose, CA**

Racer - Category 2 *January 2024 – Current*

- Worked within an 8-member elite cycling squad to achieve weekly race results in California, and sometimes nationally

PROJECTS

Portfolio Site (link: mjv11.github.io) *December 2022 – Current*

- Constructed WebGL animations by transforming voxels between 10 3D geometric animation patterns in Three.js
- Developed custom vertex shaders in GLSL for efficient transformation of 10k polygons with vector manipulation
- Polished animations with Tween.js, custom fragment shaders, and CSS

Robots Steal NBA Jobs *November 2024*

- Programmed a robotic arm to color threshold basketball hoops, calculate trajectories, & shoot with 100% eFG accuracy
- Worked with a 5-person team to implement instantaneous delivery of positive pressure, guaranteeing release timing

Gif Editor Speedrun *November 2023*

- Designed a gif editor in C predicated on matrix convolutions to blur, sharpen, and compress gifs
- Optimized runtime 9x via OpenMP multithreading & x89 SIMD vectorization, 5x via OpenMPI multiprocessing

Handwritten Digits Assembly Computer Vision Model *October 2023*

- Wrote a miniature neural net in RISC-V that recognizes and categorizes handwritten digits
- Implemented matrix multiplication, dot products, maximums, and various other elements of model architecture

SKILLS

- **Languages:** Python, Java, Go, C, RISC-V, SQL, HTML, CSS, JavaScript, Markdown
- **Technologies:** Git, React.js, Three.js, WebGL, Pandas, NumPy, ArcGIS, Hadoop, Assembly, PyTorch, ROS, OpenStreetMap