Joonhyuk Ko

School Address
School of Engineering and Applied Science
University of Virginia
Charlottesville, VA 22903

Contact Information
(703) 401-5605
tah3af@virginia.edu
www.joonhyukko.com

RESEARCH INTERESTS

My interests lie in the intersection of machine learning, optimization, fairness, and privacy. Recently, I've been working on the utility and fairness of differential privacy.

EDUCATION

University of Virginia *Aug 2022 – May 2026*
B.S. in Computer Science, B.A. in Mathematics GPA: 3.996/4.000

Relevant Courses:
Machine Learning[*†], Convex Optimization[†], Algorithms, Real Analysis, Abstract Algebra[*], Probability, Mathematical Statistics[*], Partial Differential Equations, Linear Algebra, Theory of Computation, Software Engineering, Computer Systems and Organization

[*]Spring 2025 Courses [†]Graduate-Level Courses

RESEARCH EXPERIENCE

Research Assistant *Jan 2024 – Present*
University of Virginia, Department of Computer Science Charlottesville, VA
Advisor: **Dr. Ferdinando Fioretto**

- Undergraduate Research Assistant at RAISE (Responsible AI for Science and Engineering) group
- Research topics: Algorithmic Fairness and Differential Privacy

Research Fellow *May 2024 – Aug 2024*
University of Virginia, Department of Computer Science Charlottesville, VA
Advisor: **Dr. Ferdinando Fioretto**

- Selected as a Dean's Undergraduate Engineering Research Fellow.
- Awarded $4,800 from the engineering department to pursue full-time research for summer 2024.
- Attended weekly professional development workshops.
- Presented at 2024 Fall Undergraduate Research Expo at UVA.

PUBLICATIONS

1. **Joonhyuk Ko**, Juba Ziani, Saswat Das, Matt Williams, Ferdinando Fioretto. *"Fairness Issues and Mitigations in (Private) Socio-demographic Data Processes."*
AAAI Conference on Artificial Intelligence (**AAAI**), 2025.

TEACHING EXPERIENCE

Teaching Assistant *Jan 2023 – Dec 2023*
University of Virginia Charlottesville, VA

- Graded assignments and quizzes, and provided feedback to students for the following courses:
  - APMA 6410: Engineering Mathematics I (Fall 2023)
  - APMA 2130: Ordinary Differential Equations (Spring 2023)

Private Tutor *Jun 2023 – Aug 2023*
Self-employed Fairfax, VA

- Provided personalized instruction and guidance to rising high school students in AP Computer Science A curriculum.
- Focused on the best programming practices and problem-solving techniques to enhance students' understanding.

SKILLS

Programming Languages
Python, C, x86-64, Java, JavaScript, TypeScript, MATLAB, SQL, LaTeX

Programming Tools/Libraries
SLURM, NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Gurobi, CVXPY, SciPy

Languages
English, Korean (native)

HONORS

CRA Outstanding Undergraduate Researcher Award, Honorable Mention, 2025
Dean's Undergraduate Engineering Research Fellowship, 2024
Dean's List, 2022-2024