# Joonhyuk Ko

**School Address**
School of Engineering and Applied Science
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## 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, Java, JavaScript, TypeScript, MATLAB, SQL, LaTeX

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

**Languages**
English (native), Korean (native)

## HONORS

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