Joonhyuk Ko

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Curriculum Vitae

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EDUCATION

University of Virginia Charlottesville, VA
B.S. in Computer Science, B.A. in Mathematics *Aug 2022 – May 2026*
GPA: 3.997/4.000; (both) *Major GPA*: 4.000/4.000

Relevant Courses († Graduate-level):
Machine Learning†, Convex Optimization†, Algorithms, Real Analysis, Abstract Algebra, Linear Algebra, Probability, Mathematical Statistics, Partial Differential Equations, Theory of Computation, Computer Systems and Organization, Reinforcement Learning, Natural Language Processing, Intermediate Microeconomics

RESEARCH EXPERIENCE

University of Virginia, Department of Computer Science Charlottesville, VA
Research Assistant *Jan 2024 – Present*
Advisor: **Dr. Ferdinando Fioretto**
- Research topics: Differential Privacy, Algorithmic Fairness
- Undergraduate Research Assistant at RAISE (Responsible AI for Science and Engineering) group.
- Led to the following publication(s): C1, P1

Carnegie Mellon University, School of Computer Science Pittsburgh, PA
Research Intern *May 2025 – Aug 2025*
Advisor: **Dr. Steven Wu**
- Research topics: Uncertainty Quantification, Learning Theory
- Summer visiting researcher in Prof. Steven Wu's group on a joint project with Prof. Andrew Ilyas.
- Led to the following publication(s): W1

University of Virginia, School of Engineering and Applied Science Charlottesville, VA
Research Fellow *May 2024 – Aug 2024*
Advisor: **Dr. Ferdinando Fioretto**
- Selected as a Dean's Undergraduate Engineering Research Fellow ($4,800 research award).
- Attended weekly professional development workshops.
- Presented a poster at the 2024 Fall Undergraduate Research Expo at UVA.

PUBLICATIONS

Conference Proceedings

C1. **Joonhyuk Ko**, Juba Ziani, Saswat Das, Matt Williams, Ferdinando Fioretto. *"Fairness Issues and Mitigations in (Differentially Private) Socio-Demographic Data Processes."*
AAAI Conference on Artificial Intelligence (**AAAI**), 2025. **Oral Presentation ($< 5\%$).**

Working Papers

W1. $(\alpha - \beta)$[1] Andrew Ilyas, **Joonhyuk Ko**, Jingwu Tang, Steven Wu, Jiahao Zhang. *"Provably Label-Efficient Conformal Prediction."*
Manuscript Under Review, 2026.

Preprints

P1. **Joonhyuk Ko**, Juba Ziani, Ferdinando Fioretto. *"Optimal Allocation of Privacy Budget on Hierarchical Data Release."*
ArXiv Preprint, 2025.

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[1]Author order is alphabetical.

Awards and Honors

CRA Outstanding Undergraduate Researcher Award [link] 2025, 2026
Finalist (2026), Honorable Mention (2025).
Recognizes North American undergraduates with outstanding computing research potential.

Louis T. Rader Undergraduate Research Award [link] 2025
Top Honors. The highest undergraduate CS research award at the University of Virginia ($750 award).

The Raven Society Member 2025
The oldest and most prestigious honorary society at the University of Virginia.

AAAI 2025 Student Travel Award 2025
Received NSF-sponsored travel funding to support conference participation ($1,800 award).

Dean's Undergraduate Engineering Research Fellowship 2024
Received a stipend to pursue full-time research for summer 2024 ($4,800 award).

Invited Talks

Talk: *Fairness Issues and Mitigations in (Differentially Private) Socio-Demographic Data Processes.*
TOC4Fairness Seminar, Simons Foundation. [link] *Mar 2025*

Panelist: *Preparing for Undergraduate Research (CS 2501).*
Department of Computer Science, University of Virginia. *Feb 2025*

Academic Services

Program Committee
   AAAI Conference on Artificial Intelligence (AAAI), 2026.

Teaching Experience

Teaching Assistant
   APMA 6410 (Graduate-level): Engineering Mathematics I (Fall 2023)
   APMA 2130: Ordinary Differential Equations (Spring 2023)

Additional Information

Technical Skills: Python, C, MATLAB, LaTeX, SLURM, Gurobi, CVXPY, SciPy, TypeScript
Languages: English, Korean
Nationality: U.S. Citizen

References

Dr. Ferdinando Fioretto
Assistant Professor, Department of Computer Science
University of Virginia
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Dr. Juba Ziani
Assistant Professor, H. Milton Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology
Email: jziani3@gatech.edu

Dr. Steven Wu
Associate Professor, School of Computer Science
Carnegie Mellon University
Email: zstevenwu@cmu.edu