# Junu Lee

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## Education

**The Wharton School, University of Pennsylvania** — Philadelphia, PA
Ph.D. in Statistics — 08/2022 – *Present*
*Advisors: Zhimei Ren, T. Tony Cai*

**Harvard University** — Cambridge, MA
A.B. in Mathematics and Statistics — 08/2018 – 05/2022
S.M. in Computer Science (concurrent AB/SM program)
*Advisor: Lucas Janson*

## Research interests

Selective inference; Multiple hypothesis testing; Variable selection; Post-selection inference; e-values and e-processes; Sequential testing; Distribution-free inference;

## Papers and preprints

** denotes alphabetical order or equal contribution*

[5] **Junu Lee**, Ilia Popov, and Zhimei Ren. "Full-conformal novelty detection: A powerful and non-random approach". Major revision requested at *Journal of the American Statistical Association*. arXiv (2025): 2501.02703.

[4] Jeffrey Zhang and **Junu Lee**. "A general condition for bias attenuation by a non-differentially mismeasured confounder". In: *Biometrika* 112.3 (2025), asaf026.

[3] **Junu Lee** and Zhimei Ren. "Boosting e-BH via conditional calibration". Major revision requested at *Journal of the Royal Statistical Society, Series B*. arXiv (2024): 2404.17562.

[2] Taehyeon Kim, Eric Lin, **Junu Lee**, Christian Lau, and Vaikkunth Mugunthan. "Navigating Data Heterogeneity in Federated Learning: A Semi-Supervised Approach for Object Detection". In: *Thirty-seventh Conference on Neural Information Processing Systems*. 2023.

[1] Eugene Curtin, **Junu Lee**, Andrew Lu, and Sophia Sun. "A modified Grassmann algebra approach to theorems on permanents and determinants". In: *Linear Algebra and its Applications* 581 (2019), pp. 20–35.

## Awards and honors

| | |
|---|---|
| Lawrence D. Brown Student Paper Award Symposium Speaker | '24 |
| NSF Graduate Research Fellowship | '22 |
| Harvard College Research Program | '20 |
| Herchel Smith Harvard Undergraduate Research Fellowship | '20 |
| Derek Bok Certificate of Distinction in Teaching | '19, '20 |

## Talks

Invited talks:

5. **Full-conformal outlier detection**
   *Multiple Comparison Procedures (MCP)*
   Philadelphia, August 2025
4. **Boosting e-BH via conditional calibration**
   *BIRS: Game-theoretic statistical inference*
   Chennai, June 2025
3. **Using e-values for conformal multiple testing**
   *Wharton Statistics First Year Ph.D. Student Seminar*
   Philadelphia, April 2025
2. **Boosting e-BH via conditional calibration**
   *Lawrence D. Brown Student Paper Award Symposium*
   Philadelphia, November 2024
1. **Boosting e-BH via conditional calibration**
   *International Seminar on Selective Inference*
   Virtual, June 2024

Contributed talks:

2. **Boosting e-BH via conditional calibration**
   *Joint Statistical Meetings (JSM)*
   Nashville, August 2025
1. **Boosting e-BH via conditional calibration (with applications to variable selection)**
   *Eastern North American Region (ENAR)*
   New Orleans, March 2025

## Teaching

**Teaching Assistant, The Wharton School**

| | |
|---|---|
| STAT 9270*‡: Bayesian Statistical Theory and Methods | Spring ’24 |
| STAT 4050‡/7050†‡: Statistical Computing with R | Fall ’23 (Q2) |
| STAT 1110: Introductory Statistics | Fall ’23 |
| STAT 1020: Introductory Business Statistics | Fall ’22 |

**Teaching Assistant, Harvard University**

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|---|---|
| STAT 149: Introduction to Generalized Linear Models | Spring ’22 |
| STAT 210*: Probability I | Fall ’21 |
| STAT 111: Introduction to Statistical Inference | Spring ’20, ’21 |
| STAT 110: Introduction to Probability | Fall ’19, ’20, ’21 |

**: graduate-level courses; †: MBA courses; ‡: guest lectures given*

## Professional service

**Wharton Doctoral Program Ph.D. Mentor** August 2024 – *Present*
Provided mentorship to incoming Ph.D. students.

**Discussant**
International Seminar on Selective Inference:

– "E-statistics, group invariance and anytime-valid testing" by Muriel Pérez-Ortiz, December 2024
– "Bringing Closure to FDR Control With a Uniform Improvement of the e-Benjamini-Hochberg Procedure" by Neil Xu, May 2025

**Conferences**
– Chair of the invited session "Conformal inference and statistical testing for reliable deployment of AI/ML models" at Joint Statistical Meetings (JSM), 2025
– Organizer and co-chair of the invited session "The role of e-values in multiple testing" at Multiple Comparison Procedures (MCP), 2025

## Industry experience

**Dynamo AI** *Various*
*Founding member, advisor* 05/2022 – 12/2023
– Developed a multitude of federated learning algorithms and adapted them to various problem domains, e.g., finance, automated driving.
– Met with industry partners to collaborate on algorithms and present finished products.

**Hudson River Trading** New York, NY
*Algorithm developer intern* 06/2021 – 08/2021
– Completed multiple quantitative projects on financial forecasting.

**Proton.ai** Boston, MA
*ML research intern* 05/2019 – 08/2019
– Developed NLP-based recommendation systems for sales teams to efficiently market new products and promotions.
– Contributed to the research and training of customer churn models.