

Junhee Lee

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Professional Experience

Microsoft

Redmond, WA

Data Scientist

Jun 2017–Aug 2017, Aug 2018–Jun 2022

[BAG] Developed model to categorize 1k+ daily support tickets into 4 groupings to reduce case review times

- Trained semi-supervised NLP model based on customer verbatims (65% recall; AzureML, Databricks, Python)
- Created design spec to implement feature into engineering workflow and minimize case review times
- Implemented MLOps and dashboard reporting to measure performance and reduce cost of adoption

[WinAccessibility] Analyzed low-vision population telemetry to improve Windows 10 accessibility features

- Classifying visually impaired users with telemetry to improve Magnifier app for low vision users (R)
- Trained classifier to exclude accidental users from NSAT and make better design decisions

[UXP] Analyzed telemetry from developer UI tools to enhance experience for Windows 10 developers

- Developed metrics and automated dashboards for management to track ecosystem success
- Collaborated with program managers to establish OKRs for the UI stack
- Delivered monthly reports and presentations to leads and managers
- Managed data pipeline and provided ad hoc insights to program managers

[DEP] Developed a classifier to identify the developer population using telemetry and survey data

- Analyzed survey data to generate insights on Microsoft's developer population
- Trained gradient boosting model (76% precision) to count active users and conduct user studies (R)
- Designed survey and distributed across Windows 10 population to retrain model for data and model drift
- Published methodology and results to *Microsoft Journal of Applied Research*

FightTheStroke (NPO): MirrorHR App

Redmond, WA

Volunteer Data Scientist (Microsoft One Week Hackathon)

Apr 2019–Jul 2019

Developed dashboards to track seizures/alarms for kids with cerebral palsy using heart rate sensors

- Implemented data pipeline and aggregated raw data to provide easy-to-digest metrics for parents (PowerBI)
- Designed accessible and simplified visuals to quickly gather information on child's anomalies in heart rate
- Won Grand Prize Winner, 1st place in the Accessibility Hack Challenge, and 1st place in the Health AI Hack

Thorn (NPO)

Redmond, WA

Volunteer Data Scientist (Microsoft One Week Hackathon)

Jul 2017

Enhanced a facial recognition pipeline to match images of human trafficking victims to missing persons

- Improved facial recognition accuracy by 20% by implementing MT-CNN (Python)

Pacific Northwest National Laboratory (PNNL)

Richland, WA

Technical Intern

Jul 2014–Jun 2017

Improved carbon capture to reduce greenhouse gas emissions from fossil fuel powerplants

- Ran computational chemistry simulations and statistical analyses for efficient carbon capture (published)
- Coded and implemented network analysis and clustering models (RDF) with noise reduction (FT)

USCLAP Statistics Competition (American Statistical Association)

Grinnell, IA

Project Co-leader, 1st Prize Winner

Nov 2016–Dec 2016

Studied attitudes on technology and their impact on employment through surveys

- Trained random forests (R) predicting employment status (AUC: 0.84)
- Summarized insights on attitudes that affect employment by researching policy changes

Data Analysis and Social Inquiry Lab (DASIL)

Grinnell, IA

Research Assistant

Aug 2017–May 2018

- Trained mixed-effects linear model to differentiate learning rates of using hand-bows and atlatis
- Trained social network models of Franco-Malian governments to determine impact of EU migration policies on African institutions

Education

Grinnell College

B.A. in Mathematics (Honors), Psychology (Honors), Statistics (Concentration), GPA: 3.73

Grinnell, IA

May 2018

Publications

- Lee, J. T., & Kelty-Stephen, D. G. (2017). Cascade-driven series with narrower multifractal spectra than their surrogates: standard deviation of multipliers changes interactions across scales. *Complexity*, 2017, 7015243.
- Wallot, S., Lee, J. T., & Kelty-Stephen, D. G. (2019). Switching between reading tasks leads to phase-transitions in reading times in L1 and L2 readers. *PLoS one*, 14(2), e0211502.
- Ilikhan, O., Lee, J. T., Shaikh, S., & Nyombayire, S. (2018). Identifying developer devices using Windows telemetry and Windows insider survey. *Microsoft Journal of Applied Research*, 9, 95-102.
- Cantu, D. C., Lee, J., Lee, M. -S., Heldebrant, D. J., Koech, P. K., Freeman, C. J., Rousseau, R., & Glezakou, V. A. (2016). Dynamic acid/base equilibrium in single component switchable ionic liquids and consequences on viscosity. *Journal of Physical Chemistry Letters*, 7(9), 1646–1652.

Peer Reviewer for Journals

Ad hoc

- Chaos, Solitons & Fractals

Presentations

Invited Conference Presentations

- Lee, J. T., Carver, N. S., & Kelty-Stephen, D. G. (2016). Hierarchical organizations imposing inter-dependent coordination amongst independent agents: Cascade simulation and empirical honeybee model. Invited presentation at *The Network Science of Squads*, hosted by the Army Research Office in Denton, TX

Symposium Posters/Presentations

- Lee, J. T., & Kelty-Stephen, D. G. (2017). Narrative structure supports recurrent patterning of single-word reading times. Poster presented at the 89th annual Midwestern Psychological Association, Chicago, IL.
- Lee, J. T. (2016). Realizing hypergroups as finite association schemes. Seminar given at the 2016 Grinnell College Mathematics and Statistics Student Seminars, Grinnell, IA.
- Lee, J. T. (2016). Grouping hypergroups with associated association schemes. Poster presented at the Science Division Poster Session, 2016 Family Weekend, Grinnell, IA.
- Lee, J. T., & Kelty-Stephen, D. G. (2016). Randomness in Multifractal Systems. Presentation given at the 2016 Grinnell College Research, Scholarship and Creative Activity Symposium, Grinnell, IA.
- Lee, J. T. (2014). Accelerating the Development of “Transformational” Solvents for CO₂ Separations. Poster presented at the Science Division Poster Session on the Family Weekend of 2014, Grinnell, IA.

Awards and Recognitions

- Microsoft One Week Hackathon 2019: Grand Prize Winner, Accessibility Hack Challenge Winner
- USCLAP Statistical Competition (ASA Sponsored): First prize winner
- Grinnell College Dean’s List: Spring 2015, Fall 2015, Spring 2016, Fall 2017
- Conney Kimbo Scholarship: \$8,000 for four years (merit scholarship)
- Harriet Naumann Hussong ’29 Scholarship: \$13,200 for 4 years (merit scholarship)
- 2014 Rosa L. Parks Scholarship: \$2,000 for commitment to community involvement

Committee Experience

Swedish Hospital LGBTQIA+ Patient Family Advisory Council**Seattle, WA***Council Member**Mar 2022–Present*

Provide feedback on how improving LGBTQIA+ patient experiences at Swedish Hospitals in Seattle

Joseph F. Wall '41 Service Award Selection Committee**Grinnell, IA***Student Representative**Jun 2016–Oct 2016*

Represented Grinnell College's student body to award \$25,000 towards projects effecting positive social change

Grinnell Science Project**Grinnell, IA***Mentor**Jan 2015–Jan 2016*

Advised minority, first-year undergraduate students in finding resources to succeed in science classes

Teaching Experience

Grinnell College**Grinnell, IA***Teaching Assistant**Jan 2015–May 2018*

- Physics: PHY131: General Physics I (Spring 2016), PHY132: Physics II (Fall 2015, Fall 2016)
- Mathematics: MAT222: Elementary Number Theory (Spring 2017)
- Statistics: MAT295: Intro to Data Science (Spring 2018), MAT310: Statistical Modeling (Fall 2017)

Curriculum Development

- Developed curriculum for MAT295: Intro to Data Science with 3 students and professor

Student Mentor

- Psychology: PSY325: Longitudinal Time-Series Analysis
- Global Development Studies, Political Science: technical skills in Tableau for several classes

Technical Skills

- **Programming Languages:** R, Python
- **Database Management:** SQL
- **Data Visualization:** PowerBI
- **Version Control:** Git