Mindren Lu

312-885-8668 | mindren.lu@gmail.com | linkedin.com/in/mindren-lu | github.com/mdlu

Education

Massachusetts Institute of Technology (MIT) — Cambridge, MA

MEng in Computer Science, Concentration in BioEECS; GPA: 5.0/5.0 — *Sep 2021 - May 2022*

BS in Computer Science and Biological Engineering; GPA: 5.0/5.0 — *Sep 2018 - May 2022*

Minor in Linguistics and Mathematics

- **Current Coursework:** Computational Molecular Biology, Advanced Algorithms, Analysis of Biomolecular/Cellular Systems
- **CS Coursework:** Computational Biology, Design/Analysis of Algorithms, Quantum Computation, Machine Learning, Natural Language Processing, Embedded Systems, Software Construction, Computer Systems Engineering
- **Biology Coursework:** Biological Circuit Engineering, Biochemistry, Cell Biology, Fields/Forces/Flows in Biological Systems, Genetics, Organic Chemistry, Genome Stability & Engineering, Thermodynamics of Biomolecular Systems
- **Extracurriculars:** Men's Ultimate Frisbee (B Team Captain), Camp Kesem (Counselor), Bridge Club (Exec Member), DDR@MIT (Co-Founder, President), Asian Dance Team, Badminton, Piano

Work Experience

Benchling — San Francisco, CA (Virtual)

Software Development Engineer Intern — *Jun - Aug 2021*

- Reduced the runtime of an NGS pipeline integration built in AWS by 80%, by redesigning its use of static dependencies
- Designed a novel data model to enable restarting the pipeline at intermediate points, maintaining regulatory compliance

doc.ai — Palo Alto, CA (Virtual)

Technical Project Manager Intern — *Jan - Feb 2021*

- Guided 8 MIT interns in 3 subteams to use GPT-3 to implement a digital Institutional Review Board (IRB) tool, automating clinical protocol parsing, validation, and creation

Amazon.com — Berkeley, CA (Virtual)

Software Development Engineer Intern — *May - Aug 2020*

- Designed/implemented fixed effects regression and multicollinearity checking for an internal econometric modeling toolkit in Scala & Apache Spark; used at scales (billions+ of rows of data) which existing tools in R or Stata cannot handle

Microsoft Corporation — Cambridge, MA

Software Design Engineer Intern — *Jan - Feb 2020*

- Worked with the Met/Rijksmuseum to build a web app to find pairs of semantically related artworks transcending different cultures & media; returned KNN matches with a ball tree for conditional searches, and leveraged SHAP for interpretability
- App demoed at NeurIPS 2020; **Paper:** https://arxiv.org/abs/2007.07177

Research Experience

Kellis Lab (MIT) — Cambridge, MA (Virtual)

Computational Biology Researcher — *Jun - Dec 2020*

- Built transcriptomic clocks using XGBoost and MLPs to predict tissue age in GTEx individuals and infer mechanisms of aging, improving baseline prediction correlation by 0.13; **Paper:** https://www.biorxiv.org/content/10.1101/2021.05.11.443707v1
- Investigated efficacy of drug targeting with Mendelian immune diseases and tissue-specific enhancer networks

MIT Computer Science & Artificial Intelligence Lab (CSAIL) — Cambridge, MA

Undergraduate Researcher — *Feb - Aug 2020*

- Built a framework for developing AI-mediated video conferences in Go & JavaScript with assistive visualizations and apps

Argonne National Laboratory — Lemont, IL

Research Aide — *Jan - Feb 2019*

- Implemented neural networks in Tensorflow to predict properties of oxygen atoms in $Li_3FeO_{3.5}$ using XANES spectra
- Presented a talk on this work at the 2019 APS March meeting; **Paper:** https://arxiv.org/abs/1905.03928

Skills

Familiar: Python, Java, Scala, HTML/CSS, JavaScript, Apache Spark, Git, AWS (Lambda, Batch, S3, EFS, CloudFormation)
Limited: C/C++, Arduino, Go, SQL, Assembly, Bluespec, Flask, Docker
Languages: Mandarin (fluent), Latin (proficient), Spanish (basic)