Andrew Liu

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Education and Academic Awards

Harvard University, Cambridge, MA **Class of 2023 (anticipated)**

- *Ph.D.* Bioinformatics and Integrative Genomics.
- Fellow, Emerging Leaders in Biosecurity (ELBI), Center for Health Security, Johns Hopkins University, 2021 (selected as one of 30 fellows from government, industry and academia worldwide based on contributions to biosecurity).

Harvard University, Cambridge, MA **Class of 2015**

- *S.M.* Computer Science. GPA: 3.92.
- *A.B.* Math. GPA: 3.81. Elected Phi Beta Kappa and named John Harvard Scholar (top 5 percent of class).
- 3-time Teaching Fellow: Machine Learning, Economics and Computation, and Mobile Software Engineering.

Research Publications, Invited Talks and Awards

Publications

- Liu AB, Davidi D, Springer M, et al. *Association of COVID-19 Quarantine Duration and Postquarantine Transmission Risk in 4 University Cohorts.* JAMA (Journal of American Medical Association) Network Open. **2022**
- Alley EC, Turpin M, Liu AB, Kulp-McDowall T, Swett J, Edison R, Von Stetina S, Church GM, Esvelt KM. *A machine learning toolkit for genetic engineering attribution to facilitate biosecurity.* Nature Communications. **2020**
- Gretton D, DeBenedictis EA, Liu AB, Yao AC, Esvelt KM. *Fast, accurate, secure, and universal DNA synthesis screening via random adversarial thresholds.* SecureDNA. **2020**
- Warsinske HC, Liu AB, Khatri P, et al. *Assessment of Validity of a Blood-Based 3-Gene Signature Score for Progression and Diagnosis of Tuberculosis, Disease Severity, and Treatment Response.* JAMA Network Open. **2018**
- Azad TD, Donato M, Liu AB, Khatri P, et al. *Inflammatory macrophage–associated 3-gene signature predicts subclinical allograft injury and graft survival.* Journal of Clinical Investigation Insight. **2018**

Invited Talks/Interviews

- Journal of American Medical Association Network Open Conversations Podcast. *Association of COVID-19 Quarantine Duration and Postquarantine Transmission Risk in 4 University Cohorts.* **2022**
- Dartmouth ENGS 6: Technology and Biosecurity, Dartmouth College, Hanover, NH. *Attribution of genetic engineering: A practical and accurate deep-learning toolkit for biosecurity.* **2020**

Notable Awards

- Intel Science Talent Search, National Finalist (top 40 of 1744 students) for genomics project identifying pathways in transplant rejection from gene expression data. **2011**
- Siemens Competition for Math, Science, and Technology, 5th place nationally (of 2033 students) (talk here). **2010**

Work Experience

PhD Student, Harvard Medical School – Cambridge, MA **2018-2022**

- Liu et al. 2022: Co-led study design and led study execution as first author. Was chiefly responsible for statistically analyzing COVID-19 positivity data in R, interpreting data's implications for COVID-19 quarantine duration, drafting the manuscript, and pushing the manuscript through the journal's peer review process.
- Alley, Liu et al. 2020: As middle author, developed and evaluated a machine learning method for second-order attribution, or the identification of collaborators of the lab of origin.

Software Engineer and Operations, OpenLabs – Palo Alto, CA **2020**

Technical Consultant, Bipartisan Commission on Biodefense **2020**

- Was one of a 10-person team that identified technology priorities in "The Apollo Program for Biodefense" report, which recommends federal government policies to stop future pandemics. Co-led the literature review of biodefense-related scientific and policy papers for the Apollo report.

Software Engineer, Platform Team, Udacity – Mountain View, CA **2016-2017**

- Maintained udacity.com's authentication service in Go. Used DataDog, Google App Engine and Segment.

Algorithmic Trading Intern, Jump Trading – Chicago, IL **2012**

- Researched and developed trading strategies for equity futures in R.