Avish Vijayaraghavan

Translational Machine Learning for Precision Medicine

av1017@ic.ac.uk • avishvj.github.io • linkedin.com/in/avish-vijayaraghavan/

Education

Imperial College London — London, UK
PhD Candidate in AI for Healthcare — Oct 2021 - Present

- Working on multimodal, interpretable learning for idiopathic pulmonary fibrosis, supervised by Joram M. Posma, Philip Molyneaux, Tim Ebbels, and Daniel Muthas.
- Part of the third cohort for the AI4Health CDT programme. Funded by UKRI and AstraZeneca.
- CDT representative for '22/23 and '23/24.

University College London — London, UK
MSc in Precision Medicine (Distinction) — Sept 2020 - Sept 2021

- Final Project: 3D Graph Representation Learning for Transition State Generation, supervised by Brooks Paige.
- Finished on Dean's List as highest performing student on course.

Imperial College London — London, UK
BEng in Mathematics and Computer Science (Upper Second Class Honours) — Sept 2017 - July 2020

- Final Year Group Project: Cryptocurrency Exchange Platform for Bitcoin and Ethereum.
- Final Year Individual Project: Data Science for DLBCL Stratification, supervised by Elsa Angelini. Presentation featured on Department of Computing's YouTube channel.

Work Experience

Roche — London, UK
Data Science Intern — June 2025 - Aug 2025

- Using LLMs to analyse paediatric cancer reports as part of their GOSH DRIVE partnership.

Great Ormond Street Hospital DRIVE unit — London, UK
Data Scientist — July 2024 - Aug 2025

- Jul-Dec 24: full-time intern between NHS and GOSH DRIVE, using LLMs to analyse renal biopsy reports.
- Jan-May 25: part-time intern at GOSH DRIVE, writing up a paper on renal biopsy work.
- Jun-Aug 25: full-time intern between GOSH DRIVE and Roche, extending renal biopsy work to cancer.

No Patient Left Behind — Remote
Fellow — Sept 2024 - Dec 2024

- Understanding how to make pharma innovation affordable via health insurance reform in the US, and learning about pharma policy, drug economics, and patient advocacy. My course notes are here.
- Wrote about improving NICE's drug cost-effectiveness evaluations: blog post on my website here.

NHS Transformation Directorate — London, UK
Data Science Intern — Jul 2024 - Dec 2024

- Using LLMs to analyse paediatric renal biopsy reports.
- Working alongside NHS Transformation Directorate's data science team (Dan Schofield, Jonathan Hope, Jonny Pearson) and GOSH DRIVE (Pavi Rajendran, Neil Sebire).

Microsoft Research New England — Cambridge, MA, USA
Research Intern — May 2023 - Aug 2023

- Building interpretable neural networks for proteomics data, applied to Parkinson's disease.
- Worked with Kristen Severson, Lorin Crawford, Ava Amini, and Ashley Mae Conard in the BioML team.

Riverfield Partners LLP — London, UK
Scientific Consultant — Apr 2023 - May 2023

- Worked on pharma investments - analysed AI-based drug discovery companies and clinical trial results.

Arts & Business College of London — London, UK
Academic Tutor — Jan 2022 - Jan 2023

- Tutored machine learning, maths, and biology at A-Level/undergrad level.
- Helped set up and deliver online data analytics course to foreign students.

Imperial College London (Imperial Branch of St Mary's Hospital) London, UK
Undergraduate Research Intern July 2019 - Sept 2019

- Improving Gaussian process algorithms using curvature with Samir Bhatt in Imperial's Department of Infectious Disease Epidemiology.

Stealth Startup London, UK
Co-Founder, CTO Dec 2018 - Sept 2019

- Tech startup using augmented reality for gamified marketing (think "Pokémon Go for coupons").
- Built proof-of-concept iPhone app and raised pre-seed.

Preprints & Publications

From most recently published work. * denotes first/joint-first authorship.

1. Liu, X., Zhang, J., Zhou, S., van der Plas, T., **Vijayaraghavan, A.**, et al. Towards deployment-centric multimodal AI beyond vision and language. *Nature Machine Intelligence*, Oct 2025.
2. Patel, D.*, Lain, A.D.*, **Vijayaraghavan, A.***, Mirzaei, N.F.*, Mweetwa, M.N., Wang, M., Beck, T., & Posma, J.M. Microbial Named Entity Recognition and Normalisation for AI-assisted Literature Review and Meta-Analysis. *bioRxiv (under submission)*, Aug 2025. Code here.
3. Kawatra, J.S., Sabu, S., Rajendran, P., Baumgartner, C., **Vijayaraghavan, A.**, Sheldon, E.J., Booth, J., Sebire, N., Patel, S., Zenonos, A., & Pope, R. Minimal Data Maximum Impact: Lessons Learned from Real-World Unstructured Data in Paediatric Care. *AAAI Bridge Program on AI for Medicine and Healthcare, PMLR*, Apr 2025. Code here.
4. **Vijayaraghavan, A.***, Badea, C. Minimum levels of interpretability for artificial moral agents. *AI and Ethics*, July 2024.
5. Wang, M.*, **Vijayaraghavan, A.***, Beck, T., Posma, J.M. Vocabulary Matters: An Annotation Pipeline and Two Deep Learning Algorithms for Enzyme Named Entity Recognition. *Journal of Proteome Research*, June 2024. Code here.

Teaching Service, Supervision, & Outreach

Data Science Modules Imperial College London
Graduate Teaching Assistant Nov 2021 - May 2025

- Courses: Statistical Programming (MRes; Autumn 2021), Biomedical Data Science (BSc; Summer 2022, 2023, 2025), Computational Neuroscience (MSc; Autumn 2023).
- Helped develop Python code tutorials and assisted main course lead in live tutorials.

Supervision for Biomedical Data Science Projects Imperial College London
Supervisor June 2023 - Oct 2024

- Pengfei Bai (co-supervised with Joram M. Posma; Oct 2023 - Sept 2024): MRes thesis on IPF metabolomics and topological machine learning.
- Dhylan Patel (co-supervised with Joram M. Posma; Summer 2023): BSc project on microbial named entity recognition.

AI4Health Hackathon Imperial College London
Co-Organiser Sept 2023

- Organised London's first Generative AI x Healthcare hackathon. Raised funding for 3 day event from OpenAI, Hummingbird VC, and our AI4Health CDT.
- Took entrepreneurship focus and built prizes with Hummingbird VC and Microsoft for Startups.

Science Communication Online!
Content Creator Sept 2022 - Present

- Creating YouTube videos and writing blog posts, mostly around research and books I find interesting.

Skills & Interests

- **Programming Languages**: familiar with Python and R; exposed to Java, SQL, C, Swift, Haskell.
- **Technologies**: familiar with PyTorch, Git, Linux/Unix; exposed to CI/CD (GitLab, AWS, Azure), JAX.
- **Extracurricular**: Imperial College Hip Hop Society Founder & Web Secretary '19/20, Music Journalism (published as a magazine), Music Production (my Spotify profile).
- **Languages**: English (Native), Hindi (Passive Fluency), Russian (Conversational), Spanish (Conversational).