

PIYUSH AHUJA

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EDUCATION

Second B.A. in Philosophy, Politics and Economics (PPE) University of Oxford (2014–2016)
Harris Manchester College Second Degree Scholar, K.C. Mahindra Scholar and Tiara Special Grant.

Five-Year Integrated Masters in Mathematics and Computing IIT Delhi (2008–2013)
C.K. Nanda Award for all-round excellence amongst all graduating students. Specialised in algorithms

RESEARCH EXPERIENCE

Scaling Wrist sEMG for Hand Pose Estimation NeurIPS 2026 submission (IIT Delhi & Google DeepMind)
Introduces CycloFormer, a state-of-the-art wristband-rotation-invariant sEMG hand pose decoder, and a principled scaling law for the data-limited regime. Contributed writing, mentorship, and the gesture classification evaluation

Approximation Algorithms in Network Design, Master's Thesis, (IIT Delhi 2013, *received an outstanding grade*)
Studied the Single-Sink Rent-or-Buy problem (NP-hard; primal-dual approximation with provable guarantees).
Developed the first LP-based algorithm for SRoB and constructed pathological examples exposing its limitations.

AI Safety, Risk and Human-Machine Cooperation IIT Delhi (2012-13) <https://arxiv.org/abs/1307.7127>
"Man and Machine: Questions of Risk, Trust and Accountability in Today's AI Technology". Argued brittleness and opacity make autonomous AI systems socially dangerous, Accepted, *Bulletin of Science, Technology and Society*.

Congestion-Based Financial Instruments for the Internet Economy Economics Thesis, NUS and Oxford (2016)
Applied mechanism design to internet congestion: ruled out consumer-side pricing and paid prioritisation before proposing a congestion option, a novel financial derivative treating broadband congestion as tradeable risk.

Redimensioning of Euclidean Spaces (*Unpublished Manuscript*) <https://arxiv.org/abs/1307.7010>
Method for transporting vector-space structure across Euclidean spaces, building on Cantor's equivalence results.

WORK EXPERIENCE

CTO Cambridge Innovation Labs *Aug 2023 - 2026 (Present)*

- Full-stack engineer on an educational platform (Awarded an Innovate UK grant, Press: <https://www.businessweekly.co.uk/posts/cambridge-entrepreneur-backed-by-innovate-uk-to-build-the-first-worldwide-learning-web>). Guided engineering team on an LLM-powered dialogue moderation system for Danish edtech: architecture decisions, code reviews, client requirements, and debugging; prototype now piloted in universities in India and Denmark. Developed a bespoke, always-on AI assistant ("Second Brain") for a C-suite client.

Senior Software Engineer Wellcome Sanger Institute *Aug 2019–Apr 2022*

- Translated researchers' infrastructure requirements into automated provisioning scripts (Terraform, Ansible, Docker). Built hash-based content-addressed data governance CLI used across the institute (Python, Vue.js).

REFEREES

Professor Subiman Kundu
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Indian Institute of Technology Delhi

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