

BISWARUP BHATTACHARYA

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EDUCATION

- University of Southern California (USC)**, Los Angeles, CA, USA (Aug 2017 – May 2019)
Master of Science (M.S.) in Computer Science (Annenberg Fellow)
- The London School of Economics and Political Science (LSE)**, London, England, UK (Aug 2018 – Aug 2021)
Bachelor of Science (B.Sc. Honors) in Economics and Politics (First Class Honors)
- Indian Institute of Technology (IIT)**, Kharagpur, WB, India (Jul 2013 – May 2017)
Bachelor of Technology (B.Tech. Honors) in Electrical Engineering (Department Rank 2/95)
Minor in Computer Science and Engineering & *Micro-specialization* in Embedded Wireless Systems

EXPERIENCE

Citadel LLC (Jan 2021 – present)
Quant Research Engineering Manager, Global Quantitative Strategies (GQS) Chicago, IL, USA

- Leading a team in the central data and research platform, specializing in predictive modeling, data science and engineering for alpha/portfolio construction/execution/analytics use cases. Responsible for everything from sourcing the data, to doing original research, to launching those ideas to market for real-time systematic trading with continuous monitoring for the whole firm globally.

Microsoft Corporation (Jun 2019 – Jan 2021)
Software Engineer II, AI Platform, Cloud & AI Division (C&AI) Bellevue/Redmond, WA, USA

- Developed high performance, user-friendly, fully compliant, full-stack solutions for experiment authoring and analysis experiences in Microsoft's primary **experimentation (ExP)** platform
- Created new high performance APIs and systems for experiment management and data privacy, used by all customers
- Interacted closely with customers and data scientists to assess experiment success and trustworthiness
- Achieved radical performance and platform improvements across the ExP stack

University of Southern California (Aug 2017 – May 2019)
Graduate Research Fellow & Graduate Research Assistant Los Angeles, CA, USA

- Spearheaded **AI for social good** research efforts on multi-agent systems to design novel algorithmic vaccination strategies and health workers' visitation policies to maximize public health outcomes
- Researched on **multi-agent systems** to design models which achieved an overall increase of 30%+ in Quality Adjusted Life Years (QALY) over competitive baselines for a large range of networks
- Interacted closely with collaborators up to the field level to assess deployment challenges
- Published + presented 2 first-author research papers & successfully set up collaborations with various organizations

Indian Institute of Technology Kharagpur (Feb 2016 – May 2017)
Undergraduate Researcher Kharagpur, WB, India

- Researched on **deep learning** to perform fault analysis and tackle economic dispatch problems in solar power grids
- Designed novel deep learning models to solve computer vision problems related to feature identification + classification, and improving safety in autonomous vehicles with generative adversarial networks (GANs)
- Collaborated with 3 students and published 6 first-author research papers

Adobe Research (May 2016 – Jul 2016)
Research Intern, Advanced Technologies Lab (ATL) Bangalore, KA, India

- Designed a deployable machine learning-based reports **recommendation system** for Adobe Analytics which achieved practically significant NDCG, Precision, Recall & AUC improvements of 7%+ over competitive baselines
- Created a Chrome Extension (UI) to deliver the recommendations and receive feedback from analysts in real-time
- Interacted closely with multiple product managers and business analysts to discuss strategies at every stage
- Secured a Pre-Placement Offer (PPO), published 1 first-author research paper and filed 1 US patent

National Digital Library of India (May 2015 – Jul 2015)
Software Engineering Intern Kharagpur, WB, India

- Key member of the first engineering team at NDLI – a INR 1 billion Government project

- Analyzed **pattern recognition**, OCR, and natural language processing (NLP) techniques to develop a software to identify and process metadata in over 7 million digital documents (used Java, C++, JSP, Apache, and APIs)
- Deployed the software which currently services over **1 million active users** (Library: <http://ndl.iitkgp.ac.in>)

AWARDS & ACHIEVEMENTS

- **USC Annenberg Graduate Fellowship** – Top few incoming PhD students at USC (2017 – 2019)
- **Sushma Mukhija Memorial Scholarship** (Best All-Rounder Award) – Among 1400 students at IIT Kharagpur (2017)
- **EECS All India Rank 1** in the Nationwide Education & Scholarship Test (NEST - I & II) twice (2016 – 2017)
- **O. P. Jindal Engineering & Management (OPJEMS) Scholarship** – Top 80 in India (2015)
- **Olympiads** (Physics, Chemistry, Mathematics, Linguistics, Cyber, Science) – Top ranker multiple times (2011 – 2013)
- **Kishore Vaigyanik Protsahan Yojana (KVPY-SA) Fellowship** – Top 0.1% in India out of 100K+ candidates (2012)
- **National (NTSE) Scholar** – Top 0.005% in India out of 500K+ candidates. Ranked 2nd in Karnataka state (2009)

SKILLS

- **Back end:** Python, C++, C#, SQL, C, Java, MATLAB, R
- **Front end:** HTML, CSS/SCSS, JavaScript, TypeScript, ReactJS, ReduxJS
- **Miscellaneous:** Microsoft Azure, K8s, TensorFlow, PyTorch, SciPy, Office UI Fabric, L^AT_EX
- **Research:** Multi-agent systems, POMDPs, social networks, computer vision, data mining, deep learning & power systems

RESEARCH PAPERS

(Google Scholar: [edSyl7IAAAAJ](https://scholar.google.com/citations?user=edSyl7IAAAAJ), 200+ citations)

AI for Social Good

15. **Biswarup Bhattacharya**, Han Ching Ou, Arunesh Sinha, Sze-Chuan Suen, Bistra Dilkina & Milind Tambe. “TRACE: Algorithmic ACTS for Preventing the Spread of Recurrent Infectious Diseases on Networks.” **[Long paper]** (2018)
14. **Biswarup Bhattacharya**, Han Ching Ou, Arunesh Sinha, Sze-Chuan Suen, Bistra Dilkina & Milind Tambe. “Repeated Active Screening of Networks for Diseases.” *24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), Epidemiology meets Data Mining and Knowledge discovery (epiDAMIK) Workshop* at London, UK. **[Oral, Long paper]** (KDD '18)
& *The Federated AI Meeting (FAIM) 2018, 16th Adaptive Learning Agents (ALA) Workshop* at Stockholm, Sweden. **[Oral, Long paper]** (ICML/AAMAS/IJCAI '18)
Invited to *The Knowledge Engineering Review* (Cambridge University Press) **journal special issue**
Awarded the **ICML 2018 Travel Award** to attend the conference
13. Nada Aldarrab, Victor Ardulov, **Biswarup Bhattacharya**, Su Lei, Han Ching Ou, Yilei Zeng. “Individualized Optimal Behavioral Interventions by Predicting Relapse.” *University of Southern California*, Los Angeles, CA, USA. (2018)
12. **Biswarup Bhattacharya**. “Restless Bandits visiting Villages: A Preliminary Study on distributing Public Health Services.” *ACM SIGCAS Conference on Computing and Sustainable Societies (previously ACM DEV)* at Menlo Park and San Jose, CA, USA. **[Oral, Long paper]** (COMPASS '18)
11. **Biswarup Bhattacharya**, Iordanis Fostitropoulos, Negarsadat Abolhassani, Qing Dong. “INFECT: Infection Estimation in Social Networks.” *University of Southern California*, Los Angeles, CA, USA. (2018)

Recommender Systems

10. **Biswarup Bhattacharya**, Iftikhar Burhanuddin, Abhilasha Sancheti & Kushal Satya. “Intent-Aware Contextual Recommendation System.” *17th IEEE International Conference on Data Mining, 5th International Workshop on Data Science and Big Data Analytics (DSBDA)* at New Orleans, LA, USA. **[Oral, Long paper]** (ICDM '17)
Awarded the **IEEE ICDM 2017 Student Travel Grant** to attend the conference

Computer Vision

9. **Biswarup Bhattacharya**, Arna Ghosh* & Somnath Basu Roy Chowdhury*. “Training Autoencoders in Sparse Domain.” *32nd AAAI Conference on Artificial Intelligence, Student Abstracts* at New Orleans, LA, USA. (AAAI '18)
Awarded the **AAAI Scholarship** to attend the conference
8. Arna Ghosh, **Biswarup Bhattacharya*** & Somnath Basu Roy Chowdhury*. “AdGAP: Advanced Global Average Pooling.” *32nd AAAI Conference on Artificial Intelligence, Student Abstracts* at New Orleans, LA, USA. (AAAI '18)

7. Arna Ghosh*, **Biswarup Bhattacharya*** & Somnath Basu Roy Chowdhury*. “SIMILARnet: Simultaneous Intelligent Localization and Recognition Network.” *arXiv Preprint 1711.02831*. [**Long paper**] (arXiv Nov '17)
6. Arna Ghosh*, **Biswarup Bhattacharya*** & Somnath Basu Roy Chowdhury*. “Handwriting Profiling using Generative Adversarial Networks.” *31st AAI Conference on Artificial Intelligence, Student Abstracts* at San Francisco, CA, USA. Awarded the **IIT Kharagpur International Travel Grant** to attend the conference (AAAI '17)
5. Arna Ghosh*, **Biswarup Bhattacharya*** & Somnath Basu Roy Chowdhury*. “SAD-GAN: Synthetic Autonomous Driving using Generative Adversarial Networks.” *30th Neural Information Processing Systems Conference, Deep Learning for Action and Interaction (DLAI) Workshop* at Barcelona, Spain. (NeurIPS '16)

AI in Electrical Power Systems

4. **Biswarup Bhattacharya** & Abhishek Sinha. “Deep Fault Analysis and Subset Selection in Solar Power Grids.” *31st Neural Information Processing Systems Conference, Machine Learning for the Developing World (ML4D) Workshop* at Long Beach, CA, USA. (NeurIPS '17)
3. **Biswarup Bhattacharya** & Abhishek Sinha. “Intelligent Subset Selection of Power Generators for Economic Dispatch.” *arXiv Preprint 1709.02513*. [**Full paper**] (arXiv Sep '17)
2. **Biswarup Bhattacharya** & Abhishek Sinha. “Intelligent Fault Analysis in Electrical Power Grids.” *29th IEEE International Conference on Tools with Artificial Intelligence* at Boston, MA, USA. [**Oral, Long paper**] (ICTAI '17)

Miscellaneous

1. Somnath Basu Roy Chowdhury, **Biswarup Bhattacharya** & Sumit Agarwal. “Location Optimization of ATM Networks.” *arXiv Preprint 1706.09243*. (arXiv Jun '17)

(* = equal contribution)

US PATENT

1. **Biswarup Bhattacharya**, Iftikhar Burhanuddin, Abhilasha Sancheti, Kushal Satya & Shriram Revankar. “Context-aware Recommendation System for Analysts.” *US Patent number: US 10,846,617 B2*. (Granted 2020)

ACTIVITIES

- **Memberships:** AAI, IEEE
- **Program Committee Member:**
 - International Conference on Advanced Computational Intelligence (ICACI) (2019)
 - Association for the Advancement of Artificial Intelligence (AAAI) Conference (2024)
 - International AAI Conference on Web and Social Media (ICWSM) (2025)
 - IEEE Virtual Reality (VR) Conference (2025)
 - ACM CHI Conference on Human Factors in Computing Systems (CHI) (2025)
 - International Conference on Information Processing in Computer-Assisted Interventions (IPCAI) (2025)
- **Reviewer:**
 - IEEE Transactions on Cybernetics (2018 – present)
 - Expert Systems With Applications (2021 – present)
 - ACM Journal on Computing and Sustainable Societies (2023 – present)
 - ACM Transactions on Knowledge Discovery from Data (2024 – present)
 - Elsevier Information Sciences (2024 – present)
 - Elsevier Pattern Recognition (2024 – present)
 - Elsevier Neural Networks (2024 – present)
 - IEEE Transactions on Intelligent Transport Systems (2024 – present)
 - IEEE Signal Processing Letters (2024 – present)
 - IEEE Open Journal of Signal Processing (2024 – present)
 - IEEE Transactions on Circuits and Systems I: Regular Papers (2024 – present)
 - Machine Learning for Physical Systems (ML4PS) workshop, Neural Information Processing Systems (NeurIPS) (2024)
 - Foundation Model Interventions (MINT) workshop, Neural Information Processing Systems (NeurIPS) (2024)
 - Workshop on Mathematical Reasoning and AI (MATH-AI), Neural Information Processing Systems (NeurIPS) (2024)
 - Workshop on Creativity & Generative AI, Neural Information Processing Systems (NeurIPS) (2024)

- Unifying Representations in Neural Models (UniReps) workshop, Neural Information Processing Systems (NeurIPS) (2024)
- Machine Learning and Compression workshop, Neural Information Processing Systems (NeurIPS) (2024)
- Causality and Large Models (CaLM) workshop, Neural Information Processing Systems (NeurIPS) (2024)
- Safe Generative AI workshop, Neural Information Processing Systems (NeurIPS) (2024)
- Engineering Research Express (2024 – present)
- **Volunteer:** United Nations (2018 – 2019)
- **Interests:** Piano, flying (student pilot license), sailing (US Keelboat Certification)