Aditya Acharya

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Profile

Self-motivated Ph.D.-level Computer Scientist with a curious, analytical mind and a passion for all things AI, automation & data. Experience building machine learning systems using pytorch, managing and analyzing data using Python (NumPy, SciPy, pandas, scikit-learn), Postgres SQL and developing algorithms and software for end-user products. Experience in advanced reinforcement learning, deep learning and AI, and strong communication skills for presenting and visualizing complex concepts to diverse audiences.

Education

2015–2019 **Ph.D. in Computer Science**, University of Birmingham, United Kingdom.

- Specialisation in Deep Learning, Reinforcement Learning, and HCI.

2013–2014 **M.Sc. in Human-Computer Interaction**, University of Birmingham, United Kingdom.

2007–2011 **B.Sc. in Computer Science**, KIIT University, India.

Work Experience

2020–Present **Postdoctoral Researcher**, Aalto University, Finland.

- Formulated the design of human-like behaviour simulators as a reinforcement learning problem, and increase the scope of the simulator in realistic settings.
- Simulated human decision making behaviour under time pressure as a partially observable markov process, creating insights for interface layout designs.
- Explained and matched experimental observations to theoretical models using fitted statistical simulations and analytic solutions.
- Presented research results to general as well as expert audiences through invited seminars, conferences, talks and posters.
- Collaborated, influenced and contributed to research projects with international teams.

2018–2019 **Research Associate**, Alan Turing Institute, United Kingdom.

- Designed and developed a Mobility Data Toolkit for assessing and presenting a wide range of mobility data, from traffic flow and congestion, to levels of harmful pollutants.
- Contributed to key production algorithms to simulate scenario planning for MaaS.
- Supported Senior Data Scientists with ad-hoc and production algorithms for feature analysis and selection. Provided dashboards and automated reports for business stakeholders.
- Liaised with the government and research organisations to scope out the data requirements and processed it for quantitative research questions.

2011–2013 **Software Engineer**, Aricent Group, India.

- Deployed Java based real-time analytics portal for an on-demand video streaming website serving over 1000+ subscribers.

- Deployed, debugged and maintained complex, distributed software stacks, and optimised the stacks for best computational performance and stability.
- Configured the clustered-based deployment of WebLogic server on Linux environment to increase request counts for load balancing by 3x.

Skills

- **Programming:**
  Python, R(R Studio), Java, SQL (Postgres), JavaScript, Shell scripting
- **Libraries:**
  Pytorch, scikit-learn, Flask, SQLAlchemy, AngularJS, NLTK, Pandas, Numpy, ggplot2, Plotly, Seaborne, Leaflet, D3.js, OpenCV, pySpark.
- Knowledge of software best practices and applied machine learning ideally suited to tackle bleeding-edge challenges in AI, Deep Learning and Reinforcement Learning.

Publication

- Jokinen, J., Acharya, A., Uzair, M., Jiang, X., Oulasvirta, A. (2021, May). Touchscreen Typing As Optimal Supervisory Control. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-14).
- Chen, X., Acharya, A., Oulasvirta, A., Howes, A. (2021, May). An Adaptive Model of Gaze-based Selection. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-11).
- Acharya, A., Howes, A., Baber, C., Marshall, T. (2018, September). Automation reliability and decision strategy: A sequential decision making model for automation interaction. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 62, No. 1, pp. 144-148). Sage CA: Los Angeles, CA: SAGE Publications.
- Howes, A., Chen, X., Acharya, A., Lewis, R. L. (2018). Interaction as an emergent property of a partially observable Markov decision process. Computational interaction, 287-310.
- Acharya, A., Chen, X., Myers, C. W., Lewis, R. L., Howes, A. (2017). Human Visual Search as a Deep Reinforcement Learning Solution to a POMDP. In CogSci.

Activities

Avid climber and hiker. Good food or an outdoor trip are always welcome.