

Yash Satsangi

Applied Research Engineer
JPMorgan Chase & Co.
25 Bank Street, Canary Wharf
London, E14 5JP

Phone: +44 7432898740
Email: yash.s.satsangi@gmail.com
Homepage: <https://yashz.github.io/>
Publications: [Google Scholar](#)
LinkedIn: [Profile](#)

Education

Ph.D., Computer Science, [University of Amsterdam](#), 2013-2019.
Lab: [WHIRL](#), [University of Oxford](#) & [AMLab](#), [University of Amsterdam](#)
Advisor: [Shimon Whiteson](#) & [Frans Oliehoek](#)
Thesis: [Active Perception for Person Tracking](#)
Committee: [Max Welling](#), [Csaba Szepesvari](#), [Theo Gevers](#), [Marcel Worring](#), [Matthijs Spaan](#), [Joris Mooij](#),
[Shimon Whiteson](#), [Frans Oliehoek](#)

M.Sc. Electrical Engineering, [Columbia University](#), 2010-2012.

B.Tech. Electronics Engineering, [NIT Nagpur](#), 2006-2010.

Research Interest

Sequential decision making, Decision-Theoretic Planning, Reinforcement Learning, Submodularity, Information Theory, Combinatorial Optimization.

Employment

Assistant Professor, [Tilburg University](#), 2020-2022

Post-doctoral Fellow, [RLAI Lab](#), [University of Alberta](#), Edmonton, Canada, 2019 - 2020
Advisor: [Michael Bowling](#) & [Martha White](#)

Research Scientist, [Netherlands Organization for Applied Scientific Research](#), Netherlands, 2017-2019.

Visiting PhD student, [Whiteson Research Lab](#), [University of Oxford](#), Oxford, UK, 2016 - 2017.

PhD student, [AMLab](#), [University of Amsterdam](#), Amsterdam, Netherlands, 2013-2017.

Senior Developer, [Capital One](#) (acquired [Bundle Inc.](#)), New York, NY, USA 2012 - 2013.

Intern, [eBay Inc.](#), San Jose, California, USA, 2011.

Research Assistant, [Behavioral Research Lab](#), [Columbia Business School](#), [Columbia University](#), New York, NY, USA, 2010 - 2011.

Intern, [Raja Rammana Centre for Advanced Technology](#), Indore, India, 2008.

Publications

PhD Thesis

Active Perception for Person Tracking

Yash Satsangi

University of Amsterdam, 2019.

Journal Articles

Exploiting Submodular Value Functions for Scaling Up Active Perception,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek, Mathijs T. J. Spaan, in *Autonomous Robots*, 2018.

Useful Policy Invariant Reward Shaping from Arbitrary Advice,

Paniz Behboudian, Yash Satsangi, Matthew E. Taylor, Anna Harutyunyan, Michael Bowling, *Neural Computing and Applications*, 2022

Conference Articles

Ledgit: A service to diagnose illicit addresses on Blockchain using Multi-Modal Unsupervised Learning

Xioaying Zhi, Yash Satsangi, Shaltiel Eloul, Sean Moran,

Accepted at the Thirty-First ACM International Conference on Information and Knowledge Management, 2022, (*CIKM*), 2022

Learning to be Cautious

Montaser Mohammedalamen, Dustin Morrill, Alexander Sieusahai, Yash Satsangi, Michael Bowling, (under review), <https://arxiv.org/abs/2110.15907>, 2022

Maximizing Information Gain in Partially Observable Environments via Prediction Rewards

Yash Satsangi, Sungsu Lim, Shimon Whiteson, Frans Oliehoek, Martha White,

in *Proceedings of the Nineteenth Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, 2020.

Real-Time Resource Allocation for Tracking Systems,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek, Henri Bouma,

in *Proceedings of the Thirty-Third Conference on Uncertainty in Artificial Intelligence (UAI)*, 2017.

Probably Approximately Correct Greedy Maximization with Efficient Bounds on Information Gain for Sensor Selection,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek,

in *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence (IJCAI)*, 2016.

Probably Approximately Correct Greedy Maximization,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek,

in *Proceedings of the Fifteenth International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, 2016.

Exploiting Submodular Value Functions for Faster Dynamic Sensor Selection,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek,

in *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI)*, 2015,

One of only 8 papers selected out of 531 AAAI 2015 papers for special talk and poster presentation at Shakey Celebration at IEEE International Conference on Robotics and Automation (ICRA), 2015,

Presented as contributed talk at Thirty-Second International Conference on Machine Learning (ICML), Workshop on Greedy is Great, 2015.

Workshop & Technical Reports

Useful Policy Invariant Shaping with Arbitrary Advice

Paniz Behboudin, Yash Satsangi, Matt Taylor, Anna Harutyunyan, Michael Bowling ,

Adaptive and Learning Agents (ALA) Workshop, AAMAS 2020

An Analysis of Piecewise-Linear and Convex Value Function for Active Perception POMDPs.,

Yash Satsangi, Shimon Whiteson, Mathijs T. J. Spaan,

Technical Report IAS-15-01, University of Amsterdam, October 2015.

Exploiting Submodular Value Functions for Faster Dynamic Sensor Selection: Extended Version,

Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek,

Technical Report IAS-14-02, University of Amsterdam, December 2014.

EEG Signal Classification using Bayesian Linear Discriminant Analysis

Yash Satsangi

Bachelor Thesis, VNIT, 2010.

Teaching Experience

Students Supervised

Shreshtha Sharma, Tilburg University, Automatic tagline generation from large unstructured text, 2021.

Tanuj, Tilburg University, Exploring the asymmetrical nature of MCTS in AlphaGo, 2021

Trang Le, Tilburg University, Diversity functions for grocery planning, 2021

Lotte Bruijn, Tilburg University, Faster submodular maximization with application for grocery planning, 2021

Cristian Chiticariu, Tilburg University, Performance of minimax approaches for generalization in non-stationary time-series, Expected 2020

Melissa Bounin, Tilburg University, Handling data imbalance for classification with deep neural networks 2021

Martijn Daeman, Tilburg University, Spam opinion detection with pre-trained language models, 2021

Tushar Dikshit, Tilburg University, Balancing explainability and knowledge distillation for deep neural networks for Malaria images, 2021

Lucie Scharzova, Tilburg University, Predicting AirBnB prices with neighborhood characteristics: A Machine Learning Approach, 2021

Osama Soumakie, Tilburg University, Using CNN to identify viral pneumonia from X-Ray images as a supportive detection tool, 2020

Niloy Purakait, Tilburg University,

Master's thesis: Designing neural architectures for RDF to text generation systems. 2020

Paniz Behboudian, [University of Alberta](#),
Master's Thesis: Soft policy invariant shaping. 2020.

Eugenio Bargiacchi, [University of Amsterdam](#),
Master's Thesis: [Dynamic Resource Allocation for Multi-Camera Systems](#), 2016.

Lecturer

Machine Learning, Lecturer and Coordinator, Tilburg University, Spring 2020

Machine Learning, Lecturer and Coordinator, Tilburg University, Fall 2020

Teaching Assistant

Machine Learning, Teaching Assistant, [University of Amsterdam](#), 2016.

Advanced Topics in Autonomous Agents, Teaching Assistant, [University of Amsterdam](#), 2014.

Advanced Topics in Autonomous Agents, Teaching Assistant, [University of Amsterdam](#), 2015.

Autonomous Agent, Teaching Assistant, [University of Amsterdam](#), 2013.

Detection and Estimation Theory, Teaching Assistant, [Columbia University](#), 2012.

Professional Experience

Research Scientist, [TNO](#), Den Hague, The Netherlands

In collaborations with notable [artists](#) developed a real-time on-mobile system that converts EEG signal, heart rate and electrodermal response (to music) to experience/emotions. This system was presented as an [art exhibit](#) at the [Dutch design week \(DDW\) 2017](#). The project finally culminated into a [start-up](#).

Led the development of a data-driven algorithm for parcel distribution among drivers for a international parcel delivery service. On historical data, the algorithm saved at least *half-an-hour per day* of parcel distribution time.

As a member of a [Horizon 2020](#) project, developed a framework for a reinforcement learning based automatic web crawler that could learn to collect relevant information including automatic CAPTCHA solver in certain cases.

Led the development of tools for textual analysis and search in large corpus of text documents. Designed a customized search engine for billions of hand-written reports from last 50 years

Senior Developer, [Capital One](#), New York, NY, USA

Responsible for continuous development and maintenance of data processing pipeline that converted billions of anonymous credit card transactions into customer-facing merchant review website. The specific steps involved entity resolution to map each transaction to a merchant in a national database of merchants, neighborhood identification and generating merchant review scores per neighborhood/category. The data processing pipeline was deployed using Hadoop, Hive, Lucene and MySQL for fast information retrieval. Also, responsible for building and management of this infrastructure and databases.

Developed scalable methods for entity resolution in a large corpus of merchant data collected from multiple sources.

Developed scalable scoring algorithms for ranking merchants based on transaction data.

Retrieved publishable weekly insights from data.

Intern, **eBay Inc.**, San Jose, California, USA

Designed and implemented a *distributed text summarization* algorithm for snippet generation for eBay products directly from the product description. Specific steps involved stopword removal, part-of-speech tagging, identifying product specific features that were used to generate 'information score' for each phrase in the description. The final summary was created using greedy maximization.

Research assistant, **Center for Computational Learning Systems, Columbia University**, New York, NY, USA

Used generalized projected clustering and other existing subspace clustering algorithms to cluster EEG data into epileptic and non-epileptic clusters.

Integrated generalized projected clustering with probabilistic PCA to produce superior results for classifying seizure in EEG data.

Community Activities

Reviewer, **Journal of Artificial Intelligence Research (JAIR)**.

Reviewer, **Neural Information Processing Systems (NeurIPS)**, 2018, 2019, 2020

Reviewer, **International Conference on Machine Learning (ICML)**, 2015, 2016, 2018, 2019, 2020

Reviewer, **Autonomous Agents and Multi-Agent Systems (AAMAS)** 2019, 2020

Reviewer, **AAAI Conference on Artificial Intelligence (AAAI)**, 2017, 2019, 2020, 2021

Reviewer, **IEEE Conference on Decision and Control (CDC)**, 2017.

Editor, **Amsterdam Science Magazine**, 2014 - 2016.

Organizer, Data science seminar at TNO, XAI team, 2018.

Organizer, **AMLab seminars**, UvA, 2013.

Organizer, Decision Theory Reading Group at UvA, 2014.

Seminar & Talks

Tilburg University, 2019

University of Alberta, Edmonton Alberta, Canada, 2019

Microsoft Research, Cambridge, UK 2017.

University of Oxford, Oxford, UK, 2017, 2018.

TU Delft, Netherlands, 2016, 2018.

Contributed Talk, **Greedy is Great**, ICML, Lille, France, 2015.

AMLab Seminar, University of Amsterdam, Amsterdam, Netherlands, 2014,2015,2016.

Awards

First place (€10,000 in funding) at application of data science in systems biology hackathon organized by systems biology group at TNO, 2018.

Conference and travel scholarship, [ICRA](#), 2015.

[CBSE](#) Merit certificate, 2004.

Technical Skills

JAVA, Python, Matlab, R, MySQL, Hive, Hadoop, Tensorflow, Keras, Docker, Latex.

Languages

English (Fluent)

Hindi (Fluent)

Dutch (B2 level)

Last updated: August 11, 2022

<http://yashz.github.io>