

SAUMYA YASHMOHINI SAHAI

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RESEARCH INTERESTS

Computational social science, natural language processing, human behavior, applied machine learning

EDUCATION

Doctor of Philosophy in Computer Science and Engineering *Jun 2019 - Present*
The Ohio State University, *Columbus, OH, USA* *CGPA : 3.70/4.00*

Master of Science in Neurobiology and Behavior (minor in Data Science) *Aug 2016 - May 2019*
Cornell University, *Ithaca, NY, USA* *CGPA : 3.94/4.00*

Bachelor of Engineering in Computer Science *Jul 2011 - Jul 2016*
Master of Science in Physics (Dual-degree program) *CGPA : 9.20/10.00*
Birla Institute of Technology and Science, *Pilani, India*

TECHNICAL SKILLS

Programming languages	Python, Java, SQL, Bash, Javascript
Tools and utilities	PyTorch, scikit-learn, Git, R, Matlab, Amazon Mechanical Turk

LANGUAGES

English:	Full professional proficiency
Hindi:	Native language

PAPERS AND POSTERS

Bandyopadhyay, Bortik, Pranav Maneriker, Vedang Patel, **Saumya Yashmohini Sahai**, Ping Zhang, and Srinivasan Parthasarathy. [DrugDBEmbed: Semantic Queries on Relational Database using Supervised Column Encodings](#). *arXiv preprint arXiv:2007.02384 (2020)*.

Samuel Whitehead, Shirangi T., Lindsay T., **Sahai S.**, Ehrhardt E., Beatus T., Yapici N., Dickinson M., Stern D., Cohen I. [Uncovering the Neural Basis of Flight Control in Fruit Flies](#) *Presented at the March Meeting of American Physical Society, Los Angeles, CA. (2018)*

Saumya Sahai, Whitehead S., Tsyngauz E., Cohen I., Yapici N. ‘Visual Espresso: Quantitative analysis of Drosophila foraging and ingestion behaviors’ (In preparation)

Sanchez-Alcaniz JA, Silbering AF, Croset V, Zappia G, Sivasubramaniam, AK, Abuin L, **Sahai SY**, Munch D, Steck K, Auer TO, et al. [An expression atlas of variant ionotropic glutamate receptors identifies a molecular basis of carbonation sensing](#). *Nature Communications 9: 4252 (2018)*

RESEARCH EXPERIENCE

NLP Research Intern *May 2020 - Present*
CEDAR Team, Inria, Palaiseau, France
Advisor: [Oana Balalau](#)

- Working on creating a nuanced domain independent dataset for detection of fallacies in discussions on Reddit.

- Developing deep learning models on detection of fallacies with features inspired from classical theories of argumentation.

Research Assistant

Jun 2019 - Apr 2020

Data Mining Research Lab, The Ohio State University, Columbus, OH

Advisor: [Srinivasan Parthasarathy](#)

- Worked on generating informative representation for raw drug description with the goal of classifying the type of interaction it has with another drug, using LSTM based-neural network architectures in PyTorch framework.
- Worked on quantifying distances between opinions using state-of-the-art models for natural language understanding.

Graduate Research Assistant

Jun 2017 - May 2019

Department of Neurobiology and Behavior, Cornell University, Ithaca, NY

Advisor: [Nilay Yapici](#)

Modeled the optimal strategies underlying foraging decisions in *Drosophila melanogaster* under varying conditions of internal states and external stimuli using reinforcement learning models. Wrote end-to-end pipeline for data analysis in R and Python.

Rotating Graduate Student

Jan 2017 - May 2017

Department of Physics, Cornell University, Ithaca, NY

Advisor: [Itai Cohen](#)

Investigated the neuronal basis of flight stabilization under perturbation in *Drosophila melanogaster*. Carried out experiments and analysed data under a control theory-inspired model. Also revised the 3-D *Drosophila* hull generation code for better wing reconstruction.

Undergraduate Researcher

Jan 2015 - May 2015

Department of Computer Science and Information Systems, BITS Pilani, India

Advisor: [Yashvardhan Sharma](#)

Restructured the existing JAVA based text summarizer to work for non-English languages. Created corpora of reviews in non-English languages and predicted their sentiments.

Winter Research Scholar

May 2015 - Jul 2015

Queensland Brain Institute, The University of Queensland, Brisbane, Australia

Advisor: [Geoffrey Goodhill](#)

Carried out the project 'Mathematical Analysis of Neural Coding in Zebrafish Tectum'. Worked towards the development of mathematical models with the help of statistical tools to explain spontaneous activity taking place in the tectum of zebrafish in the absence of any visual stimuli.

Summer Research Fellow

May 2014 - Jul 2014

Indian Institute of Science, Bangalore, India

Advisor: [Vijay B. Shenoy](#)

Worked on the project 'Will a Superfluid Deplete at Zero Temperature in Presence of Interactions?'. The simulations were performed in Mathematica.

Summer Research Intern

May 2013 - Jul 2013

National Centre for Antarctic and Ocean Research, Goa, India

Advisor: [Alvarinho J. Luis](#)

Carried out the project ‘A polar geospatial information extraction system using spectral characteristics of high resolution optical remote sensing data and bathymetric extraction’ using MATLAB.

INDUSTRIAL EXPERIENCE

Product Development Intern

Jan 2016 - Jun 2016

Adobe Systems, Noida, India

Mentor: [Gaurav Bhargava](#)

Developed a plug-in implementing the two-way and three-way difference and merge algorithm, for preserving formatting and design layout of the different classes of text and tables, being reimported into Adobe InDesign® files.

OTHER PROJECTS

Stance-based summarization of online debates

Aug 2020 - Present

Generate stance-based extractive summaries of debates, by encoding discourse structure in addition to the content.

Discourse act classification of online forum conversations

Aug 2020 - Present

Classify discourse acts of written conversational text by using BERT based models.

HONOURS AND AWARDS

Global Gateway Graduate Student Research Abroad Grant, The Ohio State University	2020
University Fellowship, The Graduate School, The Ohio State University	2019 - 2020
Mong Junior Fellow, Cornell Neurotech, Cornell University	2018 - 2019
Cornell Fellowship, Department of Neurobiology and Behavior, Cornell University	2016 - 2017
Best Academic Performer for the Batch of 2011, Physics Society, BITS Pilani	2015
Summer Research Fellowship, Indian Academy of Sciences	2014
INSPIRE Fellowship, Department of Science and Technology, Govt. of India	2011-2016

COURSEWORK

Speech and Language Processing	Bayesian Data Analysis
Cutting-Edge Topics in NLP	Algorithms
Social Media and Text Analytics	Time Series Analysis
Machine learning and Data Mining	Computer Architecture

TEACHING EXPERIENCE

Graduate Teaching Assistant

Jan 2018 - May 2018

Introduction to Neuroscience, Cornell University, Ithaca, NY

Duties included leading discussion sections, coordinating lecture sessions, designing preliminary and final examinations and grading assignments and exams for this introductory neuroscience course for sophomores.