Shweta Prasad

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EDUCATION

Ashoka University, Sonipat, Haryana, India — Aug 2018 – Aug 2022
BSc. Hons. in Computer Science with a Biology minor
- Lab Affiliation: Neuroethology Lab, Ashoka University
- Cumulative GPA: 3.57 / 4.0

Neuromatch Academy, School of Computational Neuroscience — Jul 2020 – Jul 2020
Interactive Track student, mentored by Dr. Adrien Peyrache, McGill University, Canada

Hari Sri Vidya Nidhi School, Punkunnam, Thrissur, Kerala, India — June 2012 – May 2016
Grade XII - ISC - 94.25 %; Grade X - ICSE - 94.25 %

RESEARCH EXPERIENCE

Neuroethology Lab, Ashoka University — Aug 2018 – Present
Supervisor: Dr. K. Bittu Rajaraman (Associate Professor, Depts. of Biology and Psychology)
- Ongoing project: Mathematically modelling call pattern generation and recognition in bushcrickets using complex dynamical system models.
- Independent study completed in topics in computational neuroscience with a focus on understanding spike sorting neural data, doing field work and assisting Ph.D students in designing behavioral experiments.

Neuromatch Academy — Jul 2020 – Jul 2020
Mentor: Dr. Adrien Peyrache, McGill University, Canada
- Completed group project: Decoding neural data from Steinmetz, et al., 2019, to predict erroneous decision making in trained mice. We made use of GLMs to predict whether the performance of trained mice that performed well in an 2-AUC experimental paradigm was affected by previous erroneous decisions. Results were inconclusive.

Single Molecule Biophysics, Haldar Lab, Ashoka University — Dec 2019 – Present
Supervisors: Dr. Shubhasis Haldar (Assistant Professor, Dept. of Biology) and Dr. Debayan Gupta (Assistant Professor, Dept. of Computer Science)
- Ongoing project: Building and improving covalent magnetic tweezers and associated software(s) for week-long studies of single molecules biophysics. (Currently on hold, due to COVID-19)

RESEARCH INTERESTS

- Attention in machine learning and as a neurophysical phenomenon
- Network dynamics
- Central pattern generators: rhythmic pattern production and recognition, and neuroethology
- Dimensionality reduction
- Data compression using ML

PROJECTS

A Detailed Exploration of Cellular Automata

Final Project, Theory of Computation
Course taught by Dr. Mahavir Jhawar in Spring 2021.
Simulated all possible elementary automata, studied its statistical mechanics and applications in solving the majority problem (a density classification task), both theoretically and as a proposed model to explain the less understood phenomenon of stomatal patchiness.
<interactive webapp will be linked here soon>

Efficient Face-Mask Detection using Deep Nets for Syndromic Surveillance

Final Project, Introduction to Machine Learning
Course taught by Dr. Ravi Kothari in Monsoon 2020.
This project involved building an efficient face-mask detection tool suitable for cheap computation such us on mobile phones, webcams or CCTV cameras, so as to allow for real-time feedback into disease dynamics models.This project received the highest grades given across three iterations of this course. More details available upon request.

AWARDS & SCHOLARSHIPS

- Dean' s List: Spring Semester 2019 – Summer Semester 2019
  For attaining a semester GPA of at least 3.65.

TEACHING

Algorithm Design and Analysis — Jan 2021 – Apr 2021
Undergraduate Teaching Assistant
Course taught by Dr. Subhash Bhalla in Spring 2021.

Extra Curricular Extra Curricular PDF:Extra Curricular

LEADERSHIP ROLES

Student Representative, Department of Computer Science, Ashoka University — Sep 2020 – Sep 2021
Appointed by the Head of Department, Dept. of CS. I serve as primary coordinator of all communication between the department and the student body, and am responsible for outreach and organization within the student body.

Ministry of Academic Affairs , **Student Government**, Ashoka University — Sep 2020 – Sep 2021
Member of the Academic Advisory Board: The AAB is consulted by the MAA before policy decisions are made.

President, Vistaar - The Music Society, Ashoka University — Sep 2019 – Mar 2020
Vistaar is the largest student-run organization at Ashoka. As President, I:
- Brought about policy changes with regards to University facilities dispensed via Vistaar.
- Organized multiple stand-alone and collaborative on- campus events
- Shifted focus to building an inclusive, collaborative atmosphere for growth of musical engagement on campus

Ministry of Community Well-being : Infirmary & Sexual Health Dept., Student Government, Ashoka University — Jul 2019 – Mar 2019

ACADEMIC SOCIETIES

Women in Computing Society, Ashoka University — Aug 2018 – Present
Member of Events Team. WICS, Ashoka is a student led academic society that focuses on inculcating an inclusive and productive space for women and non-binary folk in CS. We work to bring more women into CS and STEM.

OTHER WORK EXPERIENCE

Alumni Relations Office, Ashoka University — Mar 2021 – Present
Associate Manager
Efficiently manage databases and a web portal for alums. Strategic planning to increase alumni engagement.

DiverseNeuro: A Diversity Project — Jun 2020 – Present
Co-Founder and Researcher
A collaborative research venture between IISER Pune and Ashoka University;
Aims to study the international academic demographic in neuroscience in order to help inclusive policy-making.

The Neuroscience Outreach Network, Princeton, NJ, USA — Aug 2020 – Jan 2021
Community Outreach and Content Coordinator
The goal of this project is to enable access to education in neuroscience to students in underserved communities, to tailor virtual or classroom lessons and materials for individual grade levels, from kindergarten to 12th grade and beyond, and provide lessons and materials to teachers, students and their caretakers in their native language (e.g., Spanish, Hindi, Russian, etc.).

Writer, Kalinga Magazine, Ashoka University — Sep 2018 – Nov 2019

Writer, Pehchaan Magazine, Ashoka University — Jan 2019 – Apr 2019

CONFERENCES

ATTENDED
- No Garland Neuroscience, 2020 – IISER Pune
- Animal Behavior Society Conference 2020
- JuliaCon 2020
- Insect Navigation Workshop 2020, U of Sussex
- ICMNS 2020
- Neuromatch 1.0, 2.0
- OCNS*2020 : Computational Neuroscience conference
- ViDA 2020: Virtual Dopamine Conference

LANGUAGES

English, Malayalam, Hindi

SKILLS

LaTeX, XeLaTeX, MATLAB, R, C/C++, Python, Java, GIMP, HTML, CSS, p5.js, Adobe Illustrator

INTERESTS

Illustration, writing, music, hiking, cycling, science communication.