Sammit Jain

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INTERESTS

- Natural Language Processing • Biological Image Analysis • Computer Vision • Machine Learning

WORK EXPERIENCE

The MathWorks, Inc.

- AI Application Engineer 2 — May 2022 – Present
  - Responsible for building and expanding MathWorks' AI/ML solutions cutting across multiple industry domains like Biopharma, Finance, Energy Production, Aerodefense
  - Helping clients build and deploy end-to-end AI solutions - leveraging technical expertise in Data modelling, deep learning, CI/CD workflows, cloud deployment.
  - Working on a diverse set of technologies - Machine Learning(ML), Deep Learning(DL), Natural Language Processing(NLP), Image Processing and Computer Vision(IPCV) and their respective implementations in MATLAB/Python/C++.
- Software Engineer 2 (Semantic Search) — Jun 2019 – May 2022
  - Contributions to the Simulink Search SDLC in C++, MATLAB, JS, Python
  - Built and deployed recommendation systems by combining work in Named Entity Recognition (NLP), Machine Learning and SQL Databases
  - Assessed complex Simulink model metadata to reduce storage footprint by 15%

Bioimage Analysis Group, Institut Pasteur

- Visiting Research Fellow - Paris, FR — Feb 2019 – Jun 2019
  - Developed key algorithms for bioimage analysis of dendritic spines - image segmentation, geodesic paths, statistical analysis (Published in ISBI 2021)

The Graduate Center, City University of New York (CUNY)

- Visiting Research Fellow (Artificial Intelligence)- New York, NY — Jul 2018 – Feb 2019
  - Investigating N-tuple Weightless Neural Networks with Prof. Robert M. Haralick.
  - Developed an open-source framework *fitcnt()* for training, tuning and deploying N-tuple Neural Networks in MATLAB

INTERNSHIPS

The MathWorks, Inc.

- EDG Machine Learning Intern - Bangalore, IN — May 2018 – Jul 2018
  - Exploratory Data Analysis, Data wrangling and Classification of Simulink Model Metadata for better user recommendations and overall search experience
  - Built, trained and deployed a classification model to support inference of user domains from Model parameters (MATLAB, Python and R)

Defence Research & Development Organisation (DRDO)

- ISSA Research Intern - Delhi, IN — May 2017 – Aug 2017
  - Path optimization problem in the area of UAV mission planning cutting across Radar systems, image processing, optimization and ML
  - Solved using an A* based implementation, which was built, tested and deployed using Python, MATLAB and STK by AGI.

BITS Pilani - KK Birla Goa Campus

- Professional Teaching Assistant - Goa, IN — Jan 2016 – May 2017
  - Helped conduct tutorial sessions and evaluate/design lab sessions for the course - Computer Programming
  - Computer Programming included C programming language fundamentals, data structures and algorithms.

EDUCATION

BITS Pilani , Goa, India

- M.Sc.(hons) Mathematics — Aug 2014 – May 2019
- B.E.(hons) Electrical and Electronics Engineering — Aug 2014 – May 2019

RELEVANT COURSEWORK

Applications of Computer Science in Biology • Numerical Methods for PDEs • Computer Programming • Digital Signal Processing • Optimization • Graphs and Networks • Discrete Math • Probability and Statistics

PUBLICATIONS

JOURNALS AND CONFERENCES

[1] Mate N., Shaji R., Das M., Jain S. and Banerjee A. "Expression of polyamines and its association with GnRH-I in the hypothalamus during aging in rodent model" *Springer Nature (Amino Acids)*, Feb 2022.

[2] Sammit Jain, Suvadip Mukherjee, Lydia Danglot and Jean-Christophe Olivo-Marin "Morphological reconstruction of detached dendritic spines via geodesic path prediction" *IEEE ISBI 2020 International Symposium on Biomedical Imaging*, Oct 2019.

[3] Fernandes, J.R.D., Jain S. and Banerjee A. "Expression of ODC1, SPD, SPM and AZIN1 in the hypothalamus, ovary and uterus during rat estrous cycle" *General and Comparative Endocrinology.*, 246. . 10.1016/j.ygcen.2017.03.005. Mar 2017.

AWARDS & SCHOLARSHIPS

- Winner, *MathWorks Hackathon*, Bengaluru — 2018
  Real-time hand-gesture recognition for MATLAB/Simulink and Windows operations
- Finalist, *AU Titan Hackathon*, Chennai — 2016
  Stereovision project shortlisted as one of top entries.
- Winner, General Quiz at *Revels 2k15* — 2015
  Secured the first position in the General quiz held at MIT, Manipal.
- Winner, *HT-PACE Inquizitive 2013* — 2013
  Secured first position among 3000 participating teams from 500 schools in Delhi/NCR
- Fellow, *DUKE University - Talent Identification Program (TIP)* in collaboration with IIM-A — 2009
  Selected among the top 64 students of the country to represent India at DUKE TIP

REFERENCES

- **Suvadip Mukherjee, Ph.D**
  Postdoctoral Researcher, Bioimage Analysis Laboratory
  Institut Pasteur, Paris, France
  smukherj@pasteur.fr
- **Prof. Arnab Banerjee**
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