SAMMIT JAIN

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CAREER PROFILE

Driven by a strong passion for Image Processing and Computer Vision, hoping to make a lasting impact in this ever-evolving world fuelled by AI. Hands-on experience in image processing and machine learning applications with a sound mathematics background.

EDUCATION

BITS Pilani — Goa, IN
B.E. (Honours) Electrical and Electronics Engineering — Aug 2014 – May 2019
M.Sc. (Honours) Mathematics — Aug 2014 – May 2019

RELEVANT COURSEWORK

Image Processing and Computer Vision, Machine Learning, Computer Programming, Graphs and Networks, Numerical Analysis, Operations Research, Optimization, Digital Signal Processing, Signals and Systems, Probability and Statistics

WORK EXPERIENCE

The Graduate Center, City University of New York (CUNY) — New York, NY
Visiting Research Fellow — Jul 2018 – Present

- Developing faster subspace classification algorithms using N-tuple Weightless NNs with Prof. Robert M. Haralick.
- Successfully developed prototype of Advanced N-tuple NN which trains significantly faster compared to its counterparts.

The MathWorks, Inc. — Bangalore, IN
Engineering Development Group (EDG) Intern — May 2018 – July 2018

- Worked on Exploratory Data Analysis to improve the Block Suggestions Feature in Simulink
- Analyzed data from 5K industry Simulink models to identify key parameters, using multivariate statistical methods.
- Modelled predictive algorithm based on bagged decision trees using MATLAB, Python and R.

ISSA, Defence R&D Organisation (DRDO) — Delhi, IN
Research Intern — May 2017 – August 2017

- Created and simulated Radar/UAV scenarios in MATLAB and STK
- Analyzed factors affecting UAV trajectories (distance, fuel, terrain) and deployed the A* algorithm to make the path-finding process significantly faster.
- Created a robust MATLAB-STK interfacing tool to generate optimized trajectories, currently deployed by scientists at DRDO.

PROJECTS

Image Segmentation using Machine Learning — Sep 2016 – Aug 2017

- Analyzed bright-field and dark-field microscopic IHC images using clustering algorithms to study gene expressions.
- Developed tool for automatic quantification and analysis of protein expressions, and published findings.

Stereovision — Aug 2016 – Aug 2017

- Constructed and calibrated a home-made stereocamera prototype to aid in obstacle detection for visually impaired.
- Successfully designed the 3D stereocamera capable of tracking obstacles of different shapes and colors.

PUBLICATIONS

- 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 (Elsevier),* 246 (2017): 9-22

AWARDS

- *Visiting Research Fellowship*, CUNY – Invited as Visiting Research Fellow for Fall 2018 — Aug 2018
- *Winner, MathWorks Hackathon*, Bengaluru – Real Time Hand Gesture Recognition — Jul 2018
- *Finalist, AU Titan Hackathon*, Chennai – Stereovision Project shortlisted as one of the top entries — May 2016

TEACHING EXPERIENCE

BITS Pilani, Teaching Assistant — Goa, IN
Computer Programming (CSF111) – Spring 2016, Spring 2017 — Jan 2016 – May 2017

- Evaluated lab exercises and quizzes. Assisted in tutorial and lab sessions to clear student queries.

TECHNICAL PROFICIENCY

MATLAB, C/C++, Python, R, HTML/CSS, OpenCV, Scikit-learn, Simulink, STK by AGI, Adobe Photoshop