Amey Chaware

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Education

Duke University | Durham, NC
Master of Science in Electrical and Computer Engineering; GPA: 3.90 *May 2020 (Expected)*
Coursework: Vector Space Methods, Random Signals and Noise, Probabilistic Machine Learning, ML in Imaging
Honors: ECE Merit Scholarship

College of Engineering, Pune | Pune, India
Bachelor of Technology in Electronics and Telecommunications Engineering; GPA: 3.69 *June 2017*
Coursework: Machine Learning, Operations Efficiency, Digital System Design, Modelling and Simulation

Skills

Languages: C/C++, Python, MATLAB
Tools: OpenCV, TensorFlow, pandas, scikit-learn, emacs, gdb, GNU Octave, Arduino, R-Pi, DraftSight

Professional Experience

Embryyo Technologies | Pune, India | *Medical Devices Start-up*
R&D Engineer *July 2017 – March 2018*

- Performed initial product research for a Microfluidic Cell Separator for early detection of blood sepsis
- Created electrical models of various target cells based on literature to simulate the Clausius-Mossotti factor
- Performed experimentation on low-cost alternate materials for microchannels
- Developed image processing algorithms for on-chip haematocrit estimation using images captured by a sensor inside a portable device

Project Experience

DeepLesion
+DataScience Initiative at Duke *January 2019 - Present*

- Started working on automated detection and classification of lesions from volumetric CT scan data

Overlapped Imaging for Classification of Malaria Parasite
Duke Computational Optics Laboratory *September 2018 - Present*

- Working on developing an imaging system and deep learning framework which captures multiple fields-of-view onto a single sensor and detects malaria parasite from the resulting image
- Showed that a CNN has high accuracy for 7 overlapped images, offering a potential 7x speedup in diagnosis
- Co-authored a submission to International Conference on Computational Photography based on the results

Stacked Steel Sheet Counter
Project for Tata Steel Limited *April 2017 – June 2017*

- Developed a portable proof-of-concept device as a solution to the challenge of counting thin steel sheets
- Used image processing in Python OpenCV with a Raspberry Pi CPU for implementing relevant algorithms

Venipuncture Assistance System
Senior Project *August 2016 – May 2017*

- Created a system based on near-infrared (NIR) imaging to simplify the procedure of venipuncture
- Modified cameras to be sensitive to NIR light and evaluated various LED arrays to obtain the best contrast in the acquired images
- Identified veins from the resulting images using OpenCV and displayed the patterns back to the operator in an augmented reality fashion, also used vein patterns as biometric identifiers in a basic security system

Leadership and Team Experience

Robot Study Circle | College of Engineering, Pune *April 2014 – March 2016*

- Participated in national level robotics competitions including Robocon where we finished 5th (2015) and 2nd (2016) and won multiple awards including Best Innovative Design award for both years

MindSpark Graphic Design Team | College of Engineering, Pune *September 2013 – October 2016*

- Member of the design team for annual technical festival MindSpark, held in the college
- Team leader from April 2016 to October 2016

Certificates

Machine Learning (Stanford, Coursera); Introduction to Data Science, Applied Data Visualisation, Applied Machine Learning (University of Michigan, Coursera), Introduction to Deep Learning (Duke, Coursera)