

Tushar Chugh

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EDUCATION

CARNEGIE MELLON UNIVERSITY

M.S. IN ROBOTIC SYSTEMS

DEVELOPMENT

Aug'15 - Dec'16 | Pittsburgh GPA: 3.75

YOUNG INDIA FELLOWSHIP

(UNIVERSITY OF PENNSYLVANIA)

MASTER'S PROGRAM IN LIBERAL ARTS

Jun'11-May'12 | New Delhi

Selected in top 57 students across India

MAHARSHI DAYANAND UNIVERSITY

B.TECH IN ELECTRONICS AND

COMMUNICATION ENGINEERING

Jul'07 - May'11 | Faridabad 73.76%

Awarded chairman scholarship

LINKS

tusharchugh.com

Github:// [tusharchugh](#)

LinkedIn:// [tusharchugh](#)

HOBBY PROJECTS

Vehicle detection using HOG and SVM

Behavioral cloning with deep learning

Lane detection and estimation of curvature

Non-Intrusive Load Monitoring

SmartCap for visually impaired

Haptic belt device for visually impaired

SKILLS

PROGRAMMING

C++ • MATLAB • Python

PLATFORM | FRAMEWORK | IDE

Linux • ROS • OpenCV • TensorFlow

Git • CI(Travis, Jenkins)

COURSEWORK

Machine Learning

Computer Vision

Robot Autonomy

Deep Learning

Algorithms

Embedded Real Time Systems (Linux Kernel)

Software - Object, Design and Concurrency

EXPERIENCE AND PROJECTS

GOOGLE | SR. ML SOFTWARE ENGINEER - SEARCH RANKING

Jan'2019 – Present | Mountain View, CA

- Designed and developed infrastructure and corpus creation pipeline for 'Things to Know' feature of Google Search
- Developed systems with multiple LLMs for guided search experience
- Fine tuned LLMs to create and filter intents for search
- Developed the machine learning models for removing ads for experimental treatments and credit repair policies (impact >100M/year)
- Owned the feature extraction and model development pipelines for predicting the risk of brand impersonation by the advertisers
- Conceptualized, created and evangelized the systems and best practices for streamlining the process of ground truth collection, continuous training of model, model debugging and metrics collections

GENERAL MOTORS | PERCEPTION - SELF DRIVING CARS

Feb'2017 – Dec'2018 | Warren, MI

- Implemented and benchmarked deep neural networks for pixel wise scene segmentation on public and internal datasets
- Developed landmark association module for semantic localization

QUALCOMM RESEARCH CENTER | SOFTWARE INTERN

May'2016 – Aug'2016 | San Diego, CA

- Worked on software development of **Neural Processing Engine (NPE)**
- Designed a cap for the blind to narrate the scene using NPE and Alexa

MICROSOFT INDIA (R&D) | SOFTWARE DEVELOPMENT ENGINEER

May'2012 – Jul'2015 | Hyderabad, India

- Envisioned, created and, **released** to public **Kinect Ripple**
- Developed and released software features for Dynamic CRM tool
- Co-founded Makerzbay for Internet of Things(IoT) related development

CAPTSONE PROJECT | NREC, CMU

Aug'2015 – May'2016 | Pittsburgh, PA

- **Autonomous Water Taxi** : Implemented path-planning stack using SBPL and ROS. Created Occupancy Grid Map (OGM), designed framework to add and inflate obstacle data to OGM, used ARA* algorithm as global planner
- **Andy - Instructing robot arms via speech commands** Enabled Andy to understand speech commands for performing table-top manipulation tasks. Used HSV as color space, HOG features, and SVM for detecting shapes

PUBLICATIONS

Circuit Stickers : ACM CHI, 2014 Canada, Steve Hodge, Et Al.

Vector2703 : Autonomous Ground Vehicle, IEEE Explore Japan, T. Chugh, Et Al.

AWARDS

2016 3rd

2016 1st

2013 Editor's choice

2013 Top 12 Asia

2013 2nd/10 countries

2012 1st(India)

2010 1st(India)

Amazon Alexa

Qualcomm

Maker Faire, NYC

Wall Street Journal

Health 2.0, SF

Accenture and Yahoo

Microsoft

Internet of Voice Challenge

Hackmobile

Microsoft Research demo

Best Asian Innovations

Developer World Cup for Health

Innovation Jockeys

Imagine Cup, Poland