Nithin Murali

COMPUTER VISION · MACHINE LEARNING · NETWORKING

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Education

Indian Institute of Technology Bombay

4TH YEAR UNDERGRAD IN ELECTRICAL ENGINEERING   *2013 - PRESENT*

Experience

Google Summer Of Code 2015   *Mentors: Luis J Manso , Marco*

STUDENT DEVELOPER   *May. 2015 - Jun. 2015*

- Designed and implemented a **workspace environment** for Robocomp
- Developed tools for various tasks including building multiple components without breaking dependencies, run tests
- Packaged Robocomp and supporting components for personal package archive

Technology Consultant Intern   *Manager: Praveen*

ANI TECHNOLOGIES PRIVATE LIMITED   *May. 2016 - Jul. 2016*

- Worked with the analytical team for developing various tools for data management
- Added more customizations to the messaging api for notifications service
- Developed and simulated a **customer matching algorithm** for shared rides

Head, Image Processing And Machine Learning   *Prof. Leena Vachhani*

AUTONOMOUS UNDER WATER VEHICLE IITB   *Jul. 2014 - Apr. 2016*

- Segregated vision architecture into different layers improving modularity, scalability, significant improvement in **80%** of tasks
- Implemented a **object tracker** which predicts and tracks object position based on motion history
- Implemented **motion compensated filtering** to remove sunlight in shallow images
- Implemented and optimized machine learning algorithms for better image recognition
- Achievement : **2nd position RoboSub** San Diego 2016
- Technologies : ROS, opencv, c++, Python

Major Technical Projects

LiFi based Indoor Positioning system

ERICSSON INNOVATION AWARDS 2016 WINNER   *Apr. 2016 - Jul. 2016*

- Developed a beacon to transmit localized information using **Visual Light Communication** in a team of 5
- Implemented **custom PHY & MAC protocols** for reliable communication
- Raised an equity free funding of INR 1.3 million from Ericsson India Limited for product R&D

Refreshable Braille display   *Mentor : S. Karthikeyan*

INTEL EMBEDDED INDIA CHALLENGE 2014   *Apr. 2014 - May. 2014*

- Designed and developed a working prototype of Refreshable Braille Display which could read from both hard and e-books, produce audio and tactile output
- Used Electro-Permanent magnetic actuator which is 90% cheaper than the existing Piezo actuators
- Developed on Raspberry-PI, Intel Galileo board and Atmel's microcontrollers
- **Finalist** (top 10 out of 2000 teams) across the country
- Among top four projects from IIT Bombay who met **Dr. APJ Abdul Kalam** under Make in India scheme

Revisiting Ajanta   *Prof: Sumant Rao*

SENIOR DEVELOPER   *Mar. 2015 - Apr. 2017*

- Developed a Cross Platform App for **Virtual Reality** Tour of Ajanta Caves Using unity in C#
- Worked in a **team of 10** developers and designers
- Developed a online portal for Ajanta project and resource management along with an another developer

DQN based Game playing Agent

COURSE PROJECT

Nov. 2016 - Dec. 2016

- Developed a generic game playing agent based on **Reinforcement Learning**
- Used **Tensor-Flow** for implementation of **Deep Q Network**
- Were able to beat human players in Flappy bird

Open Source Projects

- Contributed to **Firefox** browser and related Mozilla tools
- Active contributor of Robocomp - a component based robotic architecture
- pygsheets - A python library to access google spreadsheets (200+ stars)

Other Projects

- Developed an **GSM based automation system** for electric fences for farmers
- Developed a **facial recognition system** using PCA and knn

Positions of Responsibilities

Convener Web and Coding Club (WnCC)

WEB AND CODING CLUB - ONE OF THE LARGEST CLUBS IN IITB

2014 - 2015

- Organized multiple talks, hackathons and competitions
- Participate in competitions representing IIT Bombay

Tech Counselor

HOSTEL 15-B IIT BOMBAY

2013 - 2014

- Leading a **team of 9 tech** representatives, vision of promoting tech activities in the hostel
- Conducted various competitions and workshops
- Designed coded and maintained hostel website

Co-ordinator Techfest IIT Bombay

ONE OF THE BIGGEST TECHNICAL FESTIVAL

2014 - 2015

- Developed a **Virtual Betting Android app** for Robowars
- Contributed to techfest website, mainly backend
- Managed Logistics for swarm robotics workshop

Honors & Awards

- Awarded **Institute Special Mention** (Technical), for outstanding contribution towards Robotics and Technical activities on campus , 2015
- Awarded **Best Research Award** (1 out of 150) for Institute Technical Summer Project
- 2nd position **International Robosub competition** San Diego, CA 2016

Extracurricular Activity

- Successfully completed volleyball camp under National Sports Organisation
- 4th in Intra-college technical general championship for developing automatic bicycle parking
- Guided and mentored a team for doing Institute summer technical project
- Designed and coded IIT Bombay Dramatics club website, Hostel 15 - IITB

Skills

Programming	Python, C/C++, Android, R, JAVA, SQL, PHP, bash, cmake, C#, Node.JS
Web	Django, Express, HTML5, Javascript
Development Boards	Beaglebone, Raspberry-pi, Intel Galileo, 8051