

Ritwik Ummalaneni

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EDUCATION

NORTHWESTERN UNIVERSITY

MS IN ROBOTICS

Expected Dec 2015 | Evanston, IL
Cum. GPA: 3.65/4.00

VIT UNIVERSITY

BTECH IN ECE

August 2014 | Vellore, India

Final Project : UAV - system development
Special Achiever (Class of 2014)
Cum. GPA: 8.57 / 10.00

LINKS

Project Portfolio: www.ritwiku.com
Github: www.github.com/ritwik1993
LinkedIn: www.linkedin.com/in/ritwiku

COURSEWORK

GRADUATE

Robotic Manipulation
Machine Dynamics
Advanced Computer Vision
Random Processes in Control
Optimal Control of Non-Linear systems
Machine Learning and AI in Robotics
Advanced Mechatronics
Embedded Systems in Robotics

UNDERGRADUATE

Control Systems
Robotics and Automation
Digital Image Processing
Microcontroller and Applications
Advanced Micrcontrollers(ARM,DSP)
Data Structures and Algorithms

SKILLS

PROGRAMMING

Over 10000 lines:
C • C++ • Python • Matlab
Over 1000 lines:
Mathematica

PACKAGES AND LIBRARIES

Extensive
ROS • PCL • OpenCV
Familiar
OpenGL • Gazebo • Unity

TOOLS

Git • Emacs • \LaTeX • VisualStudio

EXPERIENCE

AURIS SURGICAL ROBOTICS INC. | NAVIGATION SYSTEMS INTERN

June 2015 – September 2015 | San Francisco Bay Area, CA

- Engineered software modules for testing and analysis of real-time control and navigation systems
- Researched novel solutions for interventional navigation to reduce positional uncertainty and tissue damage through probabilistic sensor fusion, state estimation and computer vision

MSR - NORTHWESTERN UNIVERSITY | GRADUATE STUDENT

September 2014 – December 2015 | Evanston, IL

- Undertook a variety of projects, working on different platforms primarily using ROS, PCL and Gazebo
- Platforms: KUKA youBot, Rethink Robotics - Baxter, Oculus Rift
- Practical experience in various meta-packages in ROS (perception, navigation, MoveIt! etc.) and in other open source frameworks like OpenCV, PCL, Gazebo etc

UAV DEVELOPMENT CENTRE - VIT | FOUNDER & RESEARCH ASSOCIATE

January 2014 – May 2014 | Vellore, India

- Spearheaded the robotics research laboratory at VIT University
- Initiated and completed several projects, leading multidisciplinary teams successfully
- Assisted the PI in drafting research grant proposals from various institutions

SCIENTIFIC AND INDUSTRIAL RESEARCH CENTRE - GVP | PROJECT INTERN

October 2013 – January 2014 | Visakhapatnam, India

- Awarded fellowship for research at this institution
- Worked on a Defence R&D project aiming to replace conventional air data systems on 4th generation fighter aircraft
- Developed modules for automated wind-tunnel data analysis. Designed and implemented a back-propagation algorithm for handling erroneous sensor data

SELECT AWARDS & ACHIEVEMENTS

2015	Best Design	Techcup - Northwestern University
2014	Special Achiever	Exemplary performance in int'l events and academics
2014	Outstanding Project	School-wide award for the best final project
2013	Research Fellowship	GVP Fellowship for outstanding research 2013-14
2013	Finalist	EADS/Airbus Group: Join the spirit contest
2012	Finalist	Texas Instruments analog design contest

REFERENCES

Dr. Todd Murphey
Director - MS in Robotics
Professor in Mechanical Engineering
Northwestern University
t-murphey@northwestern.edu

Dr. Jarvis Schultz
Asst. Director - MS in Robotics
Lecturer in Mechanical Engineering
Northwestern University
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