

Hrishik Mishra,

Munich-80335,
☎: +49 151 63 75 13 01



AREAS OF EXPERTISE

Optimal State
Estimation

Navigation
(GNSS and Visual)

Delayed
measurements

Nonlinear analysis

Visual Servoing

Robotics motion
modeling

Software
Development
cycle

RELEVANT COURSES

GNSS systems
(PPP, RTK)

Visual Navigation

On-orbit Robotics
and Dynamics

Estimation Theory

Control Systems

Machine Learning
in Robotics

Signal Processing

OBJECTIVE

To employ my knowledge in: state estimation, timing problems associated with navigation systems, nonlinear modeling, visual-servoing and extensive experience in programming to develop real-time systems that are computationally efficient and effective.

RELEVANT WORK EXPERIENCE



Deutsches Zentrum für Luft- und Raumfahrt

Master's thesis student and Student worker

October 2015-to present

- Addressing problems related to out-of-sequence (time-delayed) measurements coming from vision-based systems.
- Multi-rate estimator implementation with adaptation.
- Outlier-detection and rejection using estimator framework and event-driven estimator implementation using *SimEvents*, *Stateflow* toolboxes in Simulink for real time implementation on DEOS-SIM hardware.
- Nonlinear observability analysis and pose-estimation of uncooperative target.
- Simulation of Robot motion with *V-REP*/Simulink Client-server link which was developed by me.



Institute for Astronomical and Physical Geodesy, TU-M

Student worker

October 2014-June 2015

- Migrating a C++ based Orbit integrator software from the existing Borland (Embarcadero) system to a Visual C++ system.



National Instruments, Bangalore

Internship

June 2009-July 2009

- Trained in *LabVIEW 8.5* and *cRIO* FPGA and *HIL* (hardware in loop).
- Designed *LABVIEW* model of an Internal Combustion Engine (Spark ignition) using a mean value approach for a rapid control application
- [Project reference](#)



Robert Bosch, India/Germany

Senior Engineer

May 2012-March 2014

- Developed PC-based software for diagnostic diesel testbench using Bosch proprietary software framework *SCS*, *.NET 2.0*, serial communication.
- Software architecture, hardware communication, GUI framework, voltage/current sensing, RPM measurement with battery voltage ripple.



Infosys Ltd, India

Systems Engineer

January 2011-April 2012

- Debugging code, re-engineering, assessing impacts of changes and monitoring automation.
- *JAVA* with *IBM DB2* as a backend in *Linux*-environment.

CERTIFICATIONS

Microsoft certified
Technology Specialist
(MCTS)



SOFTWARE SKILLS

Programming: C,
C++, JAVA,
MATLAB/Simulink,
LabVIEW, C#, SQL.

Environments:
Linux, Windows

Others: LaTeX, MS
Office.

Toolchains: .NET, V-
REP

ACADEMIC BACKGROUND



M.Sc in Earth Oriented Space Science and
Technology, (**Navigation**): [2.09/5.0]

October 2014-to
present

- Seminar on Robonaut's tendon-based Control System for limbs.
- Specialization in GNSS-Navigation and Visual navigation.



B.Tech in Electrical and Electronics Engineering,
(**Control Systems**): [8.63/10.0]

2006-2010

- Seminar on Automotive throttle control systems
- Project and thesis on Electrical power supply control systems.

MISCELLANEOUS WORK/STUDY

- Client-Server connection between Simulink and V-REP for prototyping.
- Estimate vehicle-velocity using smartphone sensors (GPS-INS).
- Android based MIDI controller for musical devices:
<https://github.com/MIDleval/MIDleval/tree/master/ImperiusB/MIDleval>
- Solved the known Bosch Fun2Drive Bluetooth issue.
- Bluetooth enabled coffee machine prototype.

ACCOMPLISHMENTS

- Winner in Trelleborg Engineering app competition in Professional category.
- Achievement award in department, Robert Bosch. Recognition for proposed algorithm. [2012]
- Recipient of an award for recognition and top 4% appraisal at Infosys-Bhubaneswar. [2012]
- Established among Top 10 performers in a 1600 trainee-batch; 4.98/5 CGPA in Infosys training program. [2011]

REFEREES

- [Phillip Schmidt](#), Research Engineer, DLR.
- [Roberto Lampariello](#), Senior Scientist, DLR.
- [Vamsidhar Sunkari](#), Augment Reality projects, Robert Bosch (phone: +91 9886129894).
- [Ashok K Tripathy](#), Professor and Director of Research, Silicon Institute of Technology.
- Saibal Kumar Maiti, Project Manager, Infosys Technologies Limited, American Express. (phone: +18012091797)
- [Harish Viswanathan](#), Solutions architect, ABB (phone: +91 9886301640).
- [Prakash Verma](#), Group Manager, Automotive Aftermarket, Robert Bosch.
- Pavan Ramesh, Territory Manager, Agilent Technologies (phone: +91 8826168918)