Chethan R. Reddy

http://chethanreddy.com, Apt 1, 54 Shafter St Hancock MI - 49930, chethan.reddy@gmail.com, 906.275.9969, ♂ Pronoun - He
☆ Date of birth - 14 Dec 1989, † Citizenship - India, → US VISA CLASS - F1, Available - 5 May to 30 Aug 2019

EDUCATION

MICHIGAN TECHNOLOGICAL UNIVERSITY
PhD in Mechanical Engineering
Co-advised by Dr Mahdi Shahbakhti and Dr Rush D. Robinett III
Research focus - Model-based Predictive Control of Co-generation Energy Systems
Expected Apr 2020 | Houghton, MI
CGPA (so far): 3.79/4.00

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
MTech (MS equivalent) in Mechatronics Engineering
May 2013 | Surathkal, India
CGPA: 8.37 / 10, US equivalent CGPA: 4.00 / 4.00

EXPERIENCE

TEACHING ASSISTANT | Michigan Technological University
Aug 2017 – Present | Houghton, MI
- Lab instructor for about 45 students in fall '17, spring '18, and fall '18 terms. The course focuses on dynamics and control of mechanical systems, and consists mostly of senior undergraduate students in Mechanical engineering.

RESEARCH ASSISTANT | Michigan Technological University
May 2017 – Present | Houghton, MI
- Research in the Energy Mechatronics Laboratory at Mechanical engineering department.
- Research on model-based predictive control of (i) building HVAC system with solar energy integration, and (ii) internal combustion engine with waste heat recovery.

SENIOR ENGINEER | Robert Bosch India
Oct 2015 – Aug 2016 | Bangalore, India
- Simulation expert in the system engineering group (responsible for hybrid systems & E-Mobility) at Bosch India.

ENGINEER | Robert Bosch India
Aug 2013 – Sep 2015 | Bangalore, India
- Plant model development, control model development, integration of models, and system simulation in modeling and simulation group at Bosch India.

INTERN | Robert Bosch India
Jun 2012 – Mar 2013 | Bangalore, India
- Plant modeling support and simulation-based research on automotive waste heat recovery using thermo-electric generators (My masters thesis).

TEACHING ASSISTANT | National Institute of Technology Karnataka
Jan 2012 – May 2012 | Surathkal, India
- Lab instructor for about 60 students in spring '12. The course focuses on computer aided engineering drawing of mechanical systems, and consists mostly of junior undergraduate students in Mechanical engineering.

PUBLICATIONS

- **C. R. Reddy** , M. Toub, M. Razmara, M. Shahbakhti, R. D. Robinett, G. Aniba, **"Modeling and Optimal Control of Micro-CSP and a Building HVAC System to Minimize Electricity Cost"** , in ASME 2018 Dynamic Systems and Control Conference, American Society of Mechanical Engineers, 2018, pp. V002T28A004-V002T28A004.
- M. Toub, **C. R. Reddy** , M. Razmara, M. Shahbakhti, R. D. Robinett, G. Aniba, **"Model Predictive Control for MicroCSP Integration into a Building HVAC System"** , in 2018 14th IEEE International Conference on Control and Automation (ICCA), IEEE, 2018, pp. 890-895.
- **C. R. Reddy** , S. S. Rao, V. Desai, K. Ramachandran, **"Modeling of an Automotive Thermo-Electric Generator (ATEG)"** , International Journal of Science and Research (IJSR), India Online ISSN, pp.2319-7064, 2013.

PROJECTS

ACADEMIC

PhD Course Projects
- Fuel Consumption Reduction Technologies and Hybrid Design
- Control System Development for a Hybrid Automotive ECU (MotoHawk)
- Effect of External Supercharging in a CI Diesel Engine with Swirl Combustion Chamber (Simulation study)
- Efficacy of PV solar energy in Houghton, MI
- Decentralized model predictive control for thermal control of buildings
- Optimal control of wave energy converters

Masters Thesis
- Development of Automotive Thermo-Electric Generator (ATEG)

Bachelors Thesis
- Design and Fabrication of Boundary Layer Turbine as a Potential Automotive Engine (Compressed air as fuel)

INDUSTRY
- Model Development for Model in Loop, Software in Loop (SiL), Hardware in the loop (HIL) Simulations
- Model-based Design, Testing, and Calibration
- Active Noise Cancellation and Enhancement
- Bosch Boost Recuperation System (BRS) Simulation
- Automobile Waste Heat Recovery using Thermo-Electric Generator

SKILLS
- Modeling, simulation, data analysis, code generation in Matlab/Simulink.
- Automotive system simulation in GT-Suite, AVL, AMESim.
- Model-based predictive control.
- Linear and non-linear control theory.
- Using model-based embedded software development tool chains of ETAS, DSPACE, MotoHawk.
- Model in loop (MiL), software in loop (SiL), and hardware in loop (HiL) development and testing.