**Mandappa** Biddanda (**Mandy**)

  (734) 882-5796  mandappa@umich.edu  [linkedin.com/in/mandappabiddanda](https://www.linkedin.com/in/mandappabiddanda)  <https://sites.google.com/umich.edu/mandappa/>  Ann Arbor, MI

# PROFESSIONAL SUMMARY

## Motivated multidisciplinary Systems Engineering & Design Master’s graduate with 2.5 years experience in software industry. Driven to define problems complex system, systematically solve them and deliver value considering business requirements. Data driven person strong in Lean Systems Engineering, Design for Six Sigma, MBSE, Data Analysis, Statistics and Requirements Development.

# EXPERIENCE

## **Research Assistant –** *Optimal Design Lab, University of Michigan + Makerere University* **03/2020 – Present**

### *Developed a modular system design optimization framework as a decision tool to plan for agriculture-energy projects in Uganda*

* Collaborated with 9 students and modeled 2 subsystems in Matlab and conducted a full system mathematical optimization to find optimal design variables: crops usage, pump stages, irrigation pipes diameters.
* Developed the weather model using 30 years weather data and forecasted 2 crop prices to use as inputs for the model

## **Senior Software Engineer** (full-time) – *Infosys limited****,*** *Bangalore* **05/2016 – 09/2018**

### *Software Development & Operations (DevOps) and QA Test Engineer for clients Comcast Xfinity*

* Debugged failures, and coordinated across 5 remote cross-functional teams for resolutions– delivering 99.5% uptime /year
* Developed test cases, executed test plans and provide feedback to development team resulting in 0 production issues
* Organized project best practices, trained 8 recruits and lead implementation of standard process – Received INSTA award

## **On-Campus Student Researcher** – *Collins Aerospace, Multidisciplinary Design Program*  **01/2020 – 12/2020**

### *Built an airplane galley system as a decisions-making tool (simulation) to optimize galley power consumption and reduce cost*

* Facilitated team discussions with internal stakeholders to set the technical scope and 5 critical requirements
* Identified missing data, gathered it, and developed the Matlab baseline model to analyze impact of potential design changes
* Created milestones, tracked progress over 8 months, coordinated thermal-power teams and flexibly contributed to achieve reduction in peak power by 27.4% and average power by 10%

## **Student UX Researcher** – *Whirlpool, Center for Socially Engaged Design, University of Michigan* **05/2020 – 06/2020**

### *Engaged Ann Arbor public to understand user needs and develop a model for home sustainability education*

* Collaboratively conducted user research by interviewing 23 stakeholders to generate 11 actionable insights into sustainability
* Synthesized qualitative data into 6 “problem solving” questions and set 5 requirements for ideal solution

# EDUCATION

## **Masters of Systems Engineering & Design** – University of Michigan(GPA: 3.85) **08/2019 – 12/2020**

### **Achievements :** ISD Merit Scholarship, Co-author paper for 23rd International Conference on Engineering Design (Accepted)

### **Course:** Systems Engineering, Design for Six Sigma, Applied Business Analytics, Computational DS & ML

## **Project** – *System Architecting, Concept Development & Embodiment Design, University of Michigan* **5/2020 – 02/2021**

### *Analyzed and architected human powered vehicle (HPV) for students based on lean systems engineering design process*

* Developed requirements from high‐level mission needs to detailed component specifications and verified it’s achievement using model based system engineering (MBSE)
* Applied lean systems engineering tools like interface boundary diagram, functional decomposition, value engineering, benchmarking, QFD, and decision matrices to architect the HPV system and develop the concept

## **Project** – *Analytical Product Design, University of Michigan* **08/2019 – 12/2019**

### *Designed and developed a portable workstation by considering social and business needs – voted 3rd best product*

* Developed customer use cases, conducted market research and prioritized 2 attributes to find market fit among 5 competitors
* Facilitated product decisions process using functionality models, cognitive ergonomics, DFMEA, product life cycle assessment to improve workstation setup time from 1 min to 20 sec
* Presented alpha-beta prototypes & business plan for product release –voted “Best Presenters” by peers

### **Other Course projects:**

* Developed verification and validation requirements for Mars Entry Descent and Landing system
* Utilized systems engineering to create technical specifications and MBSE to develop an electric bus concepts for Ann Arbor

## **Bachelors of Mechanical Engineering**– NMAMIT, Mangalore(GPA: 3.70) **07/2012 – 04/2016**

### **Course:** Engineering Economics, Industrial Management and Entrepreneurship, Statistical Quality Control

# CORE COMPETENCIES

## **Software:** MATLAB, Minitab, SPSS, MERN, Julia, AppDynamics, Excel, Trello, Jira, XLDyn (SysML), SIPmath (Probability Management)

## **Technical:** System Development, Agile Software Development, Stakeholder Engagement, Qualitative & Quantitative Data Analysis, Design Thinking, Uncertainty Modeling, Decision modeling, Statistical Analysis, Design of Experiments, DFMEA, Risk Management