

# PREETHI JAYAKUMAR

## CONTACT

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## ABOUT ME

As an interdisciplinary practitioner, I view my works at the intersection of design and engineering in tandem with an inquiry into other foundational fields. I interlace diverse principles to produce innovative outcomes that are socially, commercially, and technologically sustainable. Having a background in engineering, I engage critically through design to evaluate the potential of my solutions with human-centered and planet-centered lenses.

## EDUCATION

**MA Industrial Design** 2021-2023  
Central Saint Martins  
University of the Arts London, United Kingdom

**Graduate Diploma** 2020-2021  
Products, Interiors and Spatial Design  
Royal College of Art, London, United Kingdom

**Bachelor of Technology** 2015-2019  
Instrumentation and Control Engineering  
Management Studies - Minor  
National Institute of Technology, Trichy, India

## SKILLS

### Technical

Arduino IDE  
Python  
SimuLink  
C++  
Raspberry Pi OS  
Rhino  
SolidWorks  
Fusion 360  
Blender  
KeyShot - Product Rendering Software  
Adobe Suite

### Design

Design Thinking  
User Research  
Systems thinking and Design

## PART TIME

**Retail Sales Assistant** Jan' 22 - Mar' 22  
Swatch - White City, London UK

## WORK EXPERIENCE

**Graduate Engineer Trainee in Services Business Unit** Aug' 19 - Mar' 20  
Thermax Babcock & Wilcox Energy Solutions, Pune, India

- Worked as Instrumentation Service Engineer in Electrical & Instrumentation subdivision of Boilers and Heaters division.
- In charge of Instrumentation data sheets of various types of boiler plants and control schematics for smart plant design. Performed site visits to ensure healthy operation of plants and engaged with vendors and customers for services and operations.
- Evaluated various instrumentation parts of diverse power plants across India. Performed technical bid analysis to evaluate multiple vendors & recommended preferred supplier.

**Instrumentation Engineering Intern** Nov' 17 - Dec' 17  
Internship in Yokogawa Middle East, Abu Dhabi, United Arab Emirates

- Underwent training in Yokogawa specific Centum Vp and ProSafe softwares.
- Analyzed and observed the various loop checks and logic checks performed on different sections namely ESD(Emergency Shut Down) and F&G(Fuel and Gas) system.
- Familiarized with the different control cabinets used in the smart industrial plants

**Communication Protocol Design Engineer** May' 16 - Jul' 16  
Internship in Reliance Telecomm Wing - IIT, Madras, India

- For an electric vehicle, the critical element is the communication between Battery management system (BMS) and the charging station. Developed a coding link to establish effective communication between the two components.
- Involved in coding the communication protocol between the BMS and charging system based on international protocol standards of GBT 11, GBT 15 and Indian protocol BHARAT.
- The interface developed can select among the 3 protocols based on detection of corresponding protocol selected for communication between charger and BMS. Performed real-time testing through ST Microcontrollers Eval boards.

## PROJECTS

**Shelco : Dust capturing Insulated Roofing system** Nov' 21 - Present  
Independent Project, Central Saint Martins, UK

- As a team of two, developed Shelco a roofing solution which is a dust purifying modular sandwich roof panel.
- Engineered and co-designed the solution. Engineering skills involved fluid dynamics, manufacturing processes, and developing control parameters for our testing rig using smart sensors for data monitoring and analysis.
- Performed design research, user studies, market analysis for competitors, and developing pitch decks for competitions. Our design was chosen as one of the 8 finalists from entries around the world in Stanford's Longevity Design Challenge' 22 organised by Stanford University's Longevity Centre.

**Event Triggered Sliding Mode Controller** Dec' 18 - May' 19  
Final year engineering project thesis work - NIT, Trichy, India

- Designed an Event Triggered Sliding Mode Controller (ETSMC) to improve the performance of DC-DC Power Converters (Buck Converter).
- Step down voltage converter was modeled in MATLAB and SimuLink. ETSMC was used to reduce memory usage of controller by triggering only on the occurrence of an event.