Kalpana Ramamoorthy

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CAREER OBJECTIVE

Control System Engineering Professional with a wide exposure to key engineering domain such as Unmanned Aircraft Systems, Experienced in UAV Autopilot, Control Algorithm Design and Hybrid electric vehicle. Seeking fora challenging role with good work ethics in Control system Domain, looking to contribute to the growth ofthe organization and self.

SKILLS

PROFESSIONAL SKILL

- MATLAB– Simulink, Coding, State flow
- Model Based Design of Control Laws
- M-Script
- MIL Validation
- Functional Testing
- Model based Regression testing
- Test case
- MCDC
- Mathematical modeling
- Classical Control System design
- Simulation and Testing (MIL, SIL)
- MXAM
- DOORS
- Hybrid Electric Vehicle
- HVGC-High Voltage Global Coordination
- Sim-Diff
- Aircraft Performance Analysis
- Auto-code generation
- MAAB Guidelines,DO178C, ARP4761, MIL 9490E, MIL8785C

CODING LANGUAGES KNOWN

C

CAREER SUMMARY

- **4** years of experience in **Aerospace** control system with deep control system knowledge.
- Playing role of importance in teams with core competency in system engineering.
- Hands on experience in model-based development of **Control Laws design** such as **M scripting**, **Simulink**, **stateflow**, **model in loop environment**, **software in loop environment**.
- Worked in safety critical Airborne Systems such as **DO178C, MAAB, MIL**, **ARP4761** standardspertaining to system safety and performance.
- 4 months of experience in **Automotive** Industry**.**
- Playing role of importance in **S2** and **S3** algorithm activities.

- Hands on experience in model-based development of Hybrid Vehicle such as **Simulink**, **MIL**, **MIL Validation**, **Functional Testing, MCDC, MXAM, Model based Regression Testing.**
- AEMS and REMS Standard.

WORK EXPERIENCE

- ***Senior Consultant*** at (Capgemini Engineering)
  Chennai.(June 2022 to till date)
- ***Senior Executive Engineer*** at Tata Advanced Systems Limited, Yelahanka, Bangalore.
  (June 2019 to June 2022)
- ***Intern*** at Tata Advanced Systems Limited, Yelahanka, Bangalore.
  (June 2018 to May 2019)

PROJECTS WORKED

- **Development of Autopilot of MALE Unmanned Aerial Vehicles (UAV).**
  - Requirements gathering based on AEP 4671, MIL 8785C and MIL 9490E standards.
  - Requirements and configuration management using IBM Toolchain DOORs and Rational Team Concert (RTC).
  - Non-linear Six DOF simulation of Aircraft and Open Loop performance analysis.
  - Designed Classical PID Controller for Longitudinal and Lateral dynamics.
  - Developing control strategies from scratch and Model Based Development with proof of concept of Control Software following MAAB guidelines, Auto code Generation.
  - Generation of report for two different Simulink model by using Sim-Diff tool.
  - Trimmed nonlinear Aircraft model based on initial conditions.
  - Linear closed loop testing based on State Space Method and Transfer function.
  - Bode analysis and Root locus analysis based on Plant behavior (Open loop and Closed loop).
  - Automated the process of document generation for the inner-loop and outer-loop design of the Autopilot based on envelope point.
  - Developed control laws for SAS (Stability Augmentation System) in order to improve longitudinal characteristics (short period and phugoid) and lateral characteristics (Roll, Dutch roll and spiral) of the aircraft to meet MIL-8785C requirements.
  - Developed Total Energy Control system to get better response of aircraft system.
- **Development of Autopilot of BSF (Border security Force)**
  - Designed control loops for basic attitude condition.

➢ **Design of High Voltage Global Coordination (HVGC)**

- Requirements gathering based on Hybrid Electrical Vehicles.
- Designed model for insulation resistance measurement activation.
- MIL Validation and Functional Testing.
- Automotive Architecture.
- Automotive Software.
- ICE-Internal Combustion Engine Working.
- Hybrid Electric vehicle Architecture.
- Power train.

ACADEMIC DETAILS

M.E (Control and Instrumentation Engineering)
College of Engineering Guindy (CEG), Anna University,
Chennai.
Year of Completion- 2018.

B.E (Electrical and Electronics Engineering)
Jeppiaar Engineering College , Anna University,
Chennai.
Year of Completion- 2016.

CERTIFICATION

- Completed **MATLAB** certification in Great Learning Academy.
- Completed **DESIGN OF ELECTRICAL APPARATUS USING CAD** certification conducted by M/S.Tessolve Semiconductor Pvt.Ltd./Mentor Infolytica products.held at Anna University.

DECLARATION

I honestly declare that all the above given particulars are true to the best of my knowledge and belief**.**

Yours Sincerely,
Kalpana R.