Abhijit Das

System Leader · Electromobility

4302 Alderney Pl, High Point, NC 27265

(+1) 817-521-0584 | abhijit.d80@gmail.com | abhijitdas.info | adas7232 | adas7232 | adas7232 | Google Scholar

Summary

Innovative strategist, specialist, and leader leveraging extensive academic and industrial experience in eMobility, on/off-highway vehicles, oil gas, and aerospace for resolving complex problems, while winning $1M+ opportunities. An award-winning expert in theoretical and applied control research to maintain customer commitments efficiently. Self-motivated able to translate technical material clearly for all, lead diverse cross-functional groups towards common goals, and improve quality and organic growth.
Initiating, developing, and implementing EV charging, machine learning models for better control and smart power management, and Hardware-in-the-Loop (HiL) systems to drive faster time to market and reduce costs. Passionate about sharing knowledge with the team.

Cross-Functional Global Team Management | Project Management Delivery | Strategy Development | Control Design, Code Generation | Model-Based Design | Technical Writing | System Architecture | Measurement Instrumentation |

Technical Skills

Engineering Tools	MATLAB (Simulink, Simscape, Emdebbded Coders, Stateflow), Hopsan, Danfoss PLUS+1, CANanalyer/CANape, Kvaser, BUSMASTER, LabView, Veristand, Parker IQANDesign, IQAN Toolbox for Simulink, AUTOSAR
Control Design	State Space and Nonlinear Control, PID (and Autotune)
DAQ & Analysis	Dewesoft (off-highway and e-mobility), SOMAT EDaqLite, IMC Famos
Robotics & ML	ROS, Python, Neural Network toolbox, Tensor Flow, Keras, Azure, Sensor Fusion, Kalman Filter
PM & Others	Devops, JIRA, FMU, Slack, Miro, Mindmup, Drawio, Freedcamp, Carrd, Chocolatey
Version Control	SVN, Git, BitBucket, SourceTree

Professional Experience

Volvo Trucks North America — *Greensboro, NC*

System Architect and System Lead - electromobility — *2021 - Present*

- Lead traction voltage, low voltage, and signal (CAN, LIN) system architecture and development for future electric trucks (Heavy Duty).
- Lead End User Function Implementation on future products.
- Serve as a technical lead of a cross-functional team to drive project deliverables.
- Provide input in the group's future strategy development for future electric trucks and drive key decision-making at various levels.
- Manage charging system developments (including megawatt charging system, Plug & Charge, etc.) for next-generation trucks.
- Serve as Technical and Project Lead for the eMobility Systems team.
- Lead cross-functional support activities for electric trucks under production.

Omni Powertrain Technologies — *Houston, TX*

Engineering Manager - Electrical — *2020 - 2021*

- Helped in expanding Magelec Propulsion (for electric vehicles) business in North America (***Leadership***).
- Build and manage electrical engineering team in NA to develop market-leading fully electric or electric hybrid on/off-highway vehicles.
- Defined and drove the group's strategy, performance metrics, and decision-making at the top level to make an impact on the company's success.
- Facilitate customer projects and help the sales team to earn more business.
- Collaborate with cross-functional teams to assist in faster product and system development (***Team Player***).
- Coordinate and manage system integration projects, simulation activities, software development, measurement, and data analysis, and electric motor test bench/lab to optimize timebound system projects.
- Introduced AzureDevops-based project management system to improve business efficiency through adopting an agile framework.
- Publish internal white papers on EV system integration and mentor/train engineers to improve knowledge sharing.
- Manage expenses to meet quarterly budget requirements.

Halliburton

Houston, TX

Principal R&D Engineer

2019 - 2020

- Saved over $1M in costs, designed controls, and reduced development time by building mathematical models for surface equipment, conducting closed-loop simulation with National Instrument Hardware (cRIO, PXIe), allowing engineers to test and debug code without using any field equipment (***Model-Based Design and Hardware-In-the-Loop Simulation***).
- Improved version control management by maintaining git repos and different product branches, assisting the team.
- Increased team performance efficiency by creating and providing tutorials for git and DevOps.
- Facilitated timely project completion and enhanced leadership decision-making capabilities by preparing and presenting weekly project updates and gathering feedback from upper management (***Project Management and Leadership***).
- Enriched processes by analyzing field data for modeling exercises and validating models against field data (***Data Analytics and Machine Learning***).

Danfoss

Ames, IA

Senior Engineer

2012 - 2019

- Assisted company initiative for future smart machines by actively working on machine learning and autotuning algorithm (***AI and Smart Machines***).
- Protected money by inventing smart engine torque management using a neural network-based algorithm for producing torque-limiting pumps (***Machine Learning***).
- Delivered customer competitive system by designing and generating software algorithms (Danfoss PLUS+1 micro-controllers) for different off-highway machines, such as Excavator, Forklift, and Backhoe Loader from start to finish (***Software Development, Testing, and Validation***).
- Beat out the competition, won customer projects, and drove $1M+ by developing complete forklift work functions.
- Showcased company integrated system excellence by implementing total power management schemes for higher fuel efficiency and productivity (***Software Development, Simulation, Model-Based Design***).
- Won award for leading forklift projects efficiently from start to finish by maintaining communication and collaboration with cross-functional business units for product modifications or product demonstrations (***Project Management and Leadership***).
- Enriched internship performance and quality by supervising and guiding interns on projects, and providing training and instructions for accomplishing individual internship goals (***Project Management and Leadership***).
- Amplified speed of control design, ease in data analysis, and machine performance by developing simulation models.
- Recognized with the Technical and Service Excellence Award in 2017 for successful Forklift project completion (***Award***).
- Received Certificate of Appreciation in 2016 for winning customer projects while competing with competitors (***Award***).

Caterpillar Inc.

Peoria, IL

Fuel Systems Controls Engineer

2010 - 2012

- Met customer specifications and attained emission compliance by developing, validating, and testing common rail injectors as a part of new product introduction (NPI) (***Instrumentation and Analysis***).
- Enhanced strategic development and validations for proposed control strategies and related diagnostics by maintaining and operating test benches, simulating on-engine conditions.
- Sustained production and quality requirements, and enhance future product development by participating in research and development for future fuel systems.
- Resolved critical production issues by collaborating with cross-functional teams, identifying the root cause of injector performance problems, and developing solutions (***Team Player***).

Additional Relevant Experiences

Automation and Research Institute

Fort Worth, TX

Research Assistant

2007 - 2010

- Explored nonlinear and adaptive control techniques for synchronization of multi-agent systems and quadcopters.
- Received the STEM Doctoral Fellowship for being an outstanding researcher (***Award***).

Sponsored Research and Industrial Consultancy

Kharagpur, India

Junior Project Assistant

2003 - 2006

- Investigated a novel design of autopilot for a short-range surface-to-surface skid-to-turn homing missile

Education

The University of Texas at Arlington

Arlington, Texas

Ph.D. in Electrical Engineering

2007 - 2007

- Earned the Dean Dissertation Fellowship award in recognition for being an outstanding student and maintaining a 4.0 GPA all semester (***Award***).
- GPA – 4.0, Specialization - Control theory and application in aerospace and multi-agent systems.

Indian Institute of Technology

Kharagpur, India

MS in Electrical Engineering

2003 - 2006

- Cumulative Grade Points Average - 9.47/10.0, Specialization - Control theory and application in aerospace vehicles

Bengal Engineering and Science University *Shibpur, India*

BE in Electrical Engineering *1999 - 2003*

- Project - Fuzzy logic control of an inverted pendulum

Training, Professional Services, Publications etc.

Leadership Training

- Living Excellence and Performance (LEAP)
- Dale Carnegie - Skill for Success

Patents

- A. Das (2018) *Variable Load Sense Spring Setting for Axial Piston Open Circuit Pump*, US patent 9,879,667
- A. Das, et al. (2019) *Load Dependent Electronic Valve Actuator Regulation and Pressure Compensation*, US patent 9879667B2, 2019

Books

- F.L. Lewis, A. Das, et al. (2014) *Cooperative control of multi-agent systems: optimal and adaptive design approaches*, Berlin: Spring-Verlag.
- A. Das and S. Mukhopadhyay (2010) *Nonlinear Autopilot Design for Aerospace Vehicles: Nonlinear Design of 3-Axes Autopilot for Short RangeSkid-To-Turn Homing Missiles*, VDM Verlag.

Professional Memberships

- Senior Member, *IEEE*
- Life Member, *System Society of India*

Immigration Status

- US Citizen

Peer Review Services

|IEEE Transaction on Systems | Man, and Cybernetics: Part B | Automatica | Asian Journal of Control | International Journal for Robust and Nonlinear Control | Conference on Decision and Control (CDC) | American Control Conference | IEEE/ASME International Conference on Advanced Intelligent Mechatronics | Journal of Franklin Institute | International Journal of Control | IFAC International Workshop on Adaptation and Learning | Journal of Vibration and Control | Journal in Control and Signal Processing | Advanced Intelligent Mechatronics |