CURRICULUM VITAE

KASH ACHARYA

PROJECT ENGINEER | MECHANICAL SYSTEMS & AUTOMATION

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INTERACTIVE CAREER PORTFOLIO
www.kashyapacharya.com

PROFESSIONAL EXPERIENCE

Project Engineer

Mar 2023 - Present

NS Corporation (NS Wash) | Santa Clarita, CA

Engineering & Automation

- Gather and evaluate requirements for heavy-duty vehicle wash systems, defining mechanical and fluid-system needs from concept and detailed design through optimization and troubleshooting.
- Model concepts, components and assemblies in SolidWorks. Translate functional requirements into equipment configurations and integrate components into complete wash systems.
- Calculate component stresses to verify suitability for design loads and operating conditions.
- Use Pipe Flow Expert and engineering calculations to determine flow rates, fluid velocities, operating pressures and pressure losses and evaluate overall hydraulic performance.
- Size chambers, nozzles, pumps, motors and piping. Match pump specifications and motor power to required flow, pressure and system performance.
- Produce AutoCAD shop layouts, system flow diagrams, electrical layouts and documentation for manufacturing, installation and project execution.
- Design and refine controls for hydraulic, pneumatic and electromechanical equipment. Apply control-system principles and differential equations to support efficient, reliable and safe operation.
- Develop, configure and tune control logic and automation in Siemens TIA Portal. Specify and integrate panels, activation systems, sensors, pumps, motors and valves across the machine.
- Research system performance and troubleshoot mechanical, hydraulic, pneumatic, electrical and control issues to refine designs and improve reliability.

AI Implementation & Internal Tools

- Participate in NS Wash's company-wide AI implementation plan, working with Google and Palantir.
- Developed and deployed a company-wide project and engineering workload management tool that the CEO, CFO and VP use weekly to track individual projects.
- Built a design studio website from scratch featuring the company's wash system models, helping sales staff present system options to customers.

EDUCATION

M.S. in Aerospace Engineering

Jan 2020 - May 2022

California State University, Long Beach

B.Tech. in Aeronautical Engineering

Aug 2013 - May 2017

Visvesvaraya Technological University | Bangalore, India

TECHNICAL EXPERTISE

Design	SolidWorks, AutoCAD, Autodesk Inventor, CATIA V5, ASME Y14.5
Analysis	Pipe Flow Expert, ANSYS Fluent/CFX, MATLAB/Simulink, Python, Cantera
Automation	Siemens TIA Portal, control systems, electromechanical integration

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EARLIER EXPERIENCE

Mechanical Engineer
Aug 2022 - Oct 2022

Independent Contract (NDA) | Corona, CA

- Designed and assembled components for a 500-ton hydraulic tube draw bench using Autodesk Inventor and SolidWorks, translating client requirements into mechanical designs.
- Sized solid steel plates for hydraulic pulling forces, supported hydraulic system specification and performed component and assembly stress analyses against required safety factors.

Research Assistant
Sep 2020 - May 2022

Solid Propulsion and Combustion Laboratory | Long Beach, CA

- Researched wastewater-derived ammonia as a sustainable fuel and developed chemical reaction mechanisms to simulate combustion under different test conditions.
- Built Python/Cantera programs to analyze ignition delay, reaction rates, pathways and characteristic times.
- Studied impurity effects and documented findings in a CSU Long Beach master's thesis.

Process Associate, Pricing Operations
Dec 2018 - Dec 2019

Amazon.com | Bangalore, India

- Monitored approximately 50 competing e-commerce sites across US and Mexico marketplaces, supporting competitive pricing for roughly 100,000 products per quarter. Tracked pricing behavior during major sales events, including Prime Day.

Business Analyst
Oct 2017 - Jun 2018

Laminaar Aviation | Bangalore, India

- Supported commercial planning software deployments for approximately a dozen airlines, including Air India and Iberia. Optimized flight schedules, aircraft assignments and slot requests.
- Handled IATA communications, supported FAA, EASA and DGCA regulatory requirements, and contributed client-requested features and software QA in an agile development process.

Project Assistant | Apprenticeship
Jan 2017 - May 2017

Hindustan Aeronautics Limited | Bangalore, India

- Developed a compound delta wing and integrated a leading-edge vortex controller to improve low-speed turning performance for a multirole fighter aircraft.
- Modeled the wing using CATIA V5 and SolidWorks and evaluated performance through wind-tunnel tests and ANSYS Fluent/CFX simulations.

ACADEMIC PROJECTS

Aircraft Dynamics and Altitude Hold Control
Built six-degree-of-freedom aircraft models in MATLAB/Simulink, including linear, nonlinear and longitudinal simulations. Evaluated steady-level flight under varying forces and moments and developed a controller to maintain a user-commanded altitude.

EncelaDrillSat | Enceladus Mission Concept
Evaluated an orbiter-and-lander mission to search for evidence of life on Enceladus. Studied Earth-to-Enceladus trajectories, propulsion, power, structural, thermal and cost considerations using MATLAB, Python and NASA CEA. Awarded best class project of the semester.

Counterflow Diffusion Flame Simulation
Studied ethane-air and ethylene-air counterflow diffusion flames using low-temperature reaction mechanisms in Python and Cantera.