

CHANDAN SINHA

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EDUCATION

Virginia Tech

MS, Mechanical Engineering

2021 - 2023 (exp.) | Blacksburg, VA
Robotics, Autonomous, and Dynamical
Systems (RADS) Thrust Area
GPA: 3.92/4.0

IIT Hyderabad

B.Tech, Mechanical Engineering (Honors)

2013 - 2017 | Telangana, India
Product Design & Mechatronics
CGPA: 7.98/10

LINKS

Github:// [MechanicalCoder](#)
LinkedIn:// [in/chandansinha1](#)
GrabCAD:// [chandansinha-1](#)
Goodreads:// [orangedurito](#)
StackExchange:// [OrangeDurito](#)
WordPress:// [thevindicatedaxiom](#)
YouTube:// [ChandanSinha1](#)

RELEVANT COURSEWORK

Applied Linear Systems
Applied Linear Control
Industrial Robotics
Optimization Techniques in Engg.
Digital Signal Processing
Kinematics & Dynamics of Machinery
Instrumentation and Control
Digital Fabrication (Teaching Assistant)

TECHNICAL SKILLS

Programming

C • C++ • Python • Java
HTML5 • CSS3 • Vanilla JavaScript
• ReactJS • NodeJS • Git • \LaTeX • Arduino

Modeling/Simulation

SolidWorks • MATLAB • Ansys
• Blender • ROS • CoppeliaSim (V-REP)
• Fusion 360 • OpenRocket

Miscellaneous

Database - Relational and NoSQL

OS - Linux (Debian Platform), Windows

Creativity - Adobe Photoshop, Illustrator,
Premiere Pro, After Effects [CC Suite]

EXTRA-CURRICULAR

- **Web Coordinator** - Elan & Nvision -
Techno-management fest, IIT-H | TEDxIITH
- **Graphic Designer** - Dept. of Geosciences,
Virginia Tech | Extra Mural Lectures, IIT-H
- **Video Editor** - Humour Me Pvt. Ltd.

WORK EXPERIENCE

Model-Based Systems Engineering Intern | Cummins Inc.

May 2022 – Present | Columbus, Indiana, USA | Manager: Mr. Teejay Momoh

- Worked under Corporate R&T (Research & Technology) division to bring agility in hardware product development. Learned the fundamentals of MBSE and SysML. Did system modeling in PTC Windchill Modeler. Worked on the integration of modeFRONTIER for multi-disciplinary optimization and Tom Sawyer Perspectives, a graph visualization tool to navigate complex diagrams intuitively. [Blog Post]

Graduate Researcher | SpaceDrones Lab, Virginia Tech

Aug 2021 – Present | Blacksburg, Virginia, USA | Advisor: Dr. Jonathan Black

- Developing autonomous robotic platforms for in-space assembly, servicing, and inspection. Primarily interested in the GNC (Guidance, Navigation, and Control) aspect of the drones. Previously worked at the 'Advanced Control Systems Lab' on designing robust and adaptive control algorithms for autonomous UAVs. [Blog Post]

Research Assistant | Indian Institute of Science

May 2019 – Dec 2020 | Bangalore, India | Advisor: Dr. Swetaprovo Chaudhuri

- Joined 'Turbulent Combustion Lab' in the Dept. of Aerospace Engineering. Worked on computational analysis of blow-off dynamics in interacting swirl premixed flames using PIVMat toolbox with ReadIMX package in MATLAB. Manually cleaned large datasets of sPIV-PLIF flame images and applied ML to predict flame blow-off. [Blog Post]

Executive Manager, Plant Operations | Bharat Petroleum Corp. Ltd.

June 2017 - Aug 2018 | Balasore, India

- Worked in 'Terminal Automation System', HSSE, gantry operations, equipment testing & preventive maintenance related to the handling of Class A inflammable products. As Control Room Officer, saved millions of rupees in operational costs through proactive troubleshooting with >98% NANO (No Automation No Output) rating.

Technical Assistant | Center for Healthcare Entrepreneurship

May 2016 – Apr 2017 | IIT Hyderabad | Mentor: Dr. Mohan Raghavan

- Responsible for setting up the incubation space from scratch. Underwent training at IndioLabs, Bangalore to understand the nuances of building med-tech products and complying with standards. Learned 'Human Centered Design' approach following the Stanford-India BioDesign process. Part of the 'Nemocare Wellness' founding team.

Product Development Intern | DreamsInfinity

June 2015 – July 2015 | New Delhi, India | Mentor: Mr. Anubhav Bansal

- Designed & developed a commercial stereolithography-based 3D printer. Minimized prototyping cost by local manufacturing and in-house resin preparation for Ultraviolet Direct Light Processing. Offered in 2 configurations: top-down and bottom-up. Wrote the Arduino code base for printing logic in conjunction with customized open-source 3D slicing software, Creation Workshop. [Blog Post]

NOTABLE PROJECTS

- **Master's Course Projects**
 - Performed system ID in frequency domain and designed discrete-time output feedback controller with Kalman filtering for a black-boxed LTI system [Spring'22]
 - Gear-pair optimization using Sequential Quadratic Programming [Spring'22]
 - Designed a continuous-time full-state feedback controller for attitude control of a satellite with flexible solar panels using state-space LTI system model [Fall'21]
 - Computed forward & inverse kinematics, formulated equations of motion and designed backstepping & adaptive controller for 6-axis FANUC CR-7iA robot [Fall'21]
- **Bachelor's Honors Project**
 - Dynamic modeling of 3-axis camera gimbal for smartphone cinematography
- **IIT Hyderabad Student Satellite Project**
 - Core member of Attitude Determination & Control Subsystem (ADCS)