# Advait Sawant

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## OBJECTIVE

Highly motivated MS student in Additive Manufacturing & Design with a strong academic background and diverse industry experience, seeking to further deepen expertise through a PhD in Mechanical Engineering. Leveraging solid knowledge in machine learning, advanced materials, and additive manufacturing technologies to drive data-driven innovations in additive manufacturing. Committed to making significant contributions in academia and industry, with long-term career interests in pioneering machine learning disruptions in the additive manufacturing landscape.

## EDUCATION

**Pennsylvania State University** — **State College, USA**
*Master of Science (M.S.) in Additive Manufacturing & Design* — *August 2022 - May 2024 (Expected)*

*Doctor of Philosophy (Ph.D.) in Mechanical Engineering* — *August 2023 - May 2026 (Expected)*

**Relevant Coursework:** Metal Additive Manufacturing, Scientific Principles of Additive Manufacturing, Metal Additive Manufacturing Lab, Non-Destructive Evaluation for Additive Manufacturing, Design for Additive Manufacturing (DfAM)

**Birla Institute of Technology and Science, Pilani** — **Goa, India**
*Bachelor of Engineering in Mechanical Engineering* — *August 2017 - August 2021*

**Relevant Coursework:** Production Planning & Control, Advanced Composites, Energy Management, Production Techniques, Engineering Optimization, Quality Control & Reliability, IC Engines, Product Design, Machine Design and Drawing, Material Science and Engineering, Supply Chain Management, Micro-Electro-Mechanical Systems (MEMS), Power Plant Engineering

**MOOCs:** IBM Data Science Professional Certificate offered by IBM on Coursera, DeepLearning.AI TensorFlow Developer(Certificate) offered by Deeplearning.ai on Coursera, SAS Statistical Business Analyst offered by SAS on Coursera

## FACULTY RESEARCH & PROJECTS

**ML for Defect Detection in Additive Manufacturing under Dr. Edward Reutzel and Dr. Jan Petrich (Ongoing).**

- Used Computer Vision techniques on XCT Data to detect porosity defects in test samples.
- Ongoing application of Computer Vision on Electro-Optical sensor feeds for defect detection.

**Long-Term Creep testing of Roto-Moulded Polymers under Dr. Sachin Waigaonkar.**

- We analyzed the long term creep of Rotation Moulded Polymers to determine creep coefficient for long-term use through lab experiments.
- We were accurately able to measure the creep coefficients and pass on the conclusions to our industry partners.

**OIT Testing of Polymers under Dr. Sachin Waigaonkar**

- We analyzed the Oxidation Inductive Test times of various different polymers to determine their suitability for complex, time-consuming moulding processes.
- With this analysis, we were able to to find determine the polymers suitable for recycling and passed on the information to our industry partners.

**Analysis and redesign of a moulded product failing in the field under Dr. Sachin Waigaonkar**

- We analyzed a rotation moulded product failing in the field using CAD/CAE tools like ANSYS and PTC Creo to determine the cause of failure. We then redesigned the product such that it would not fail in the field with a minimum increase in cost.
- This model was then passed on to our industry partner who implemented the changes and reported on the success of the project.

## TEACHING EXPERIENCE

**Pennsylvania State University** — **State College, PA, USA**
*ME 330 Computational Tools - FEA and CFD using Solidworks* — *January 2023 – Present*

## COMPETITIONS

**SAE Aero Design West 2023**
- Part of the Aero Design chapter at Pennsylvania State University.
- Helped design and manufacture the airframe.
- We ranked 5th overall.

**SAE Aero 2020**
- Manufacturing head at the newly formed SAE Aero BITS Goa chapter.
- Helped design, analyze and manufacture the aircraft using manufacturing methods like 3D printing.
- Ranked 5th in the presentation and 20th overall.

**SAE BAJA 2019**
- Part of the Chassis Division at SAE BAJA BITS Goa chapter.
- Helped design the chassis in Solidworks, analyze it in ANSYS and build it using novel manufacturing techniques.
- Ranked 19th in the design phase.

## MENTORING EXPERIENCE

- I mentored freshman students as part of the Peer Mentorship Program in my sophomore year.
- Every single mentee of mine cleared their freshman year without failing a single course.

## INDEPENDENT PROJECTS

**Blockchain Chain Analyzer** *December 2022 - January 2022*
- I created a chain analyzer to identify the type of wallets holding assets of a particular protocol on Ethereum and it's associated L2 blockchains using DeBank and FTMscan APIs.
- I applied machine learning algorithms on these wallets to cluster these wallets into categories for analysis.

**Optimal Business Location Analysis** *October 2020 – February 2021*
- Created a machine learning model to look at the geographical density of businesses (Coffee shops in this example) and find underserved clusters where a business could be expected to generate a profit.
- Identified the areas in Bangalore where coffee shops could be set up with minimal competition.

## INDUSTRY EXPERIENCE

**Airmeet** **Bangalore, India**
*Data Science Intern* *January 2021 – June 2022*
- I worked in the Revenue Operations (RevOps) in an analyst role and later in the Analytics team in a data science role.
- In the RevOps team, I created Go-To-Market strategies, competitor Analyses and client data enrichment for shaping the company's sales strategy.
- In the Analytics team, I created machine learning models to analyze vast amounts of data; Some of these models types being: Time-Series Analysis, Regression, Natural Language Processing, and Clustering analysis. I also created automated data pipelines to facilitate easy data retrieval for analysis.

Mentor:Mr. Shardul Walwadkar

**Aditya Birla Insulators** **Halol, Gujarat, India**
*Analyst Intern* *May 2019 - July 2019*
- I worked with the management team at the Aditya Birla Insulators plant at Halol, Gujarat in the Polymer Manufacturing division as an Analyst intern.
- I analyzed the production process and highlighted inefficiencies for throughput improvement.

## SCORES

**Graduate Record Examination (GRE)** *November 5, 2021*
- Score: 329/340
- Verbal: 162/170, Quantitative: 167/170, Analytical: 4/6

**Test of English as a Foreign Language (TOEFL)** *September 11, 2021*
- Score: 115/120
- Reading: 30/30, Listening: 30/30, Speaking: 29/30, Writing: 26/30