Piyush Tandon

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Summary:
Self-motivated engineering graduate with robust foundation in **data analytics**, **manufacturing,** and **supply chain operations**. Experience in leading and managing projects in manufacturing environments and automotive industries. Highly adaptable, with a strategic mindset and strong communication skills, eager to deliver impactful solutions for clients across diverse, international settings. Open to extensive travel.

Skills:

- **Programming Languages:** Python, R, SQL, C++, HTML, CSS, Java
- **Machine Learning & AI:** TensorFlow, Keras, Scikit-learn, PyTorch, LLMs, Random Forest, SVM, NLP
- **Data Science:** Data Preprocessing, Feature Engineering, EDA, Model Deployment, Predictive Analytics
- **Data Visualization:** Tableau, Power BI, Matplotlib, Seaborn, Minitab
- **Cloud & Big Data:** AWS (SageMaker, S3), GCP (BigQuery), Azure
- **Design and Prototyping:** SolidWorks, CREO, CATIA, CFD, Rapid Prototyping, Machining composites, 3D Printing, CNC, MPI, P&IDs, GD&T, ASME Y14.5 standards and ISO9001
- **Manufacturing and Quality Control tools:** Proficient in process capability management, defect analysis, PLM software like Active workspace client, experienced with Six Sigma methodologies, 5S, Lean Manufacturing, 8D, APQP, PPAP, DFMEA
- **Production tools:** ERP, QMS, MRP, DFM, Kaizen.
- **Project Management:** Agile, SCRUM, Stakeholder Management, Risk Mitigation, Resource Planning.
- **Soft skills:** Experienced in working with cross-functional teams, ensuring alignment, and facilitating efficient project execution. Strong communicator capable of articulating technical and non-technical concepts to diverse audiences with strong presentation skills.
- **International Experience:** Summer School Abroad at **University of Oxford**, Leadership Exchange program in **Istanbul, Turkey.**

Work Experience:

Product Engineering Co-op **Jan 2024 – Aug 2024**
Bendix Commercial Vehicle Systems – Kalamazoo, MI

- Engineered process improvements and optimized designs for heavy duty vehicle brake components using CAD and DFMEA.
- Utilized predictive modeling techniques to inform material selection and design approaches, improving product reliability.
- Participated in Design Review Council, Design Verification Plan and documenting key design changes.
- Spearheaded a project to build predictive models using Random Forest and Logistic Regression, analyzing truck system failure patterns with 92% accuracy.
- Developed a ML model for Legacy bracket cross reference with New gen brackets which resulted in reducing 90% of manual effort.
- Assisted in the creation of dashboards using Tableau, providing the leadership team with real-time insights into brake component reliability.

Mechanical Engineering Intern **Jul 2023 – Dec 2023**
UW Facilities-Engineering Services – Seattle, WA

- Analyzed HVAC systems, focused on heat recovery units and suggested improvements leading to reduced carbon footprint.
- Collaborated effectively with engineers, facility managers, and external contractors to ensure project success.
- Identified cost saving methods to save 3.8 million dollars/year and attain 45% reduction in carbon footprint.
- Managed cross-functional teams to develop and deploy machine learning models for predictive maintenance in HVAC systems, reducing downtime by 15%.
- Led project planning, scope definition, and stakeholder communication for data-driven projects in the HVAC domain.

Senior Analyst (Software and data) **Jul 2021 – Sep 2022**
Capgemini Technology Services – Pune, India

- Drove continuous improvement initiatives by automating processes using Excel Macro, Oracle BI, improving efficiency.
- Led the data analysis for a product launch at Barclays Investment, utilizing 8D and Continuous Improvement (CI) methodologies to address process inefficiencies.
- Collaborated with cross-functional teams to collect and analyze data, improving system processes and reducing errors by 25%.
- Developed Tableau dashboards for senior management to monitor product performance, enabling data-driven decisions.
- Conducted A/B testing and statistical analysis to optimize product launch strategies and improve customer satisfaction.
- Assisted in automating data extraction pipelines, resulting in a 30% increase in data processing efficiency.

Manufacturing Intern (Assembly and Supply Chain) International Internship program **Feb 2020 – Aug 2020**
Mercedes-Benz US International – Tuscaloosa, AL

- Led data-driven optimizations of assembly line layouts for GLE and GLS models, reducing takt time, increasing production by 2%.
- Utilized Python and SQL to analyze production data, identifying key bottlenecks and proposing solutions that improved workflow.
- Developed predictive models using historical production data to forecast equipment downtime, reducing maintenance by 15%.
- Conducted time series analysis of assembly line performance metrics to identify patterns and inform process improvements.
- Collaborated with cross-functional teams to design dashboards in Power BI, enabling real-time monitoring of key performance indicators (KPIs) such as takt time, cycle time, and production efficiency.

Projects:

Tiny ML ("Good Help") — Jun 2023 – Present

- Led the design and development of a voice-activated panic detection system using ML for healthcare applications, managing a team of developers and data scientists.
- Managed the project's budget, resources, and timelines, ensuring a successful deployment within the stipulated deadline.
- Coordinated the integration of AI model into mobile apps and ensured real-time notification capabilities using Firebase.
- Created the CAD model for a wearable watch that integrates the voice-activated panic detection system, focusing on ergonomic design and practical functionality.
- Collaborated with the team to ensure that the CAD design aligned with the hardware and software requirements of the project facilitating seamless integration of the technology.

NASA JPL (Grad Capstone) — Jan 2023 – Jun 2023

- Led the team as **project manager** and assisted a team of CS professionals in developing ML Model for Multi Static Lunar GPR.
- Led the data acquisition phase by collaborating with engineers and scientists to gather large-scale sensor data from various lunar ground-penetrating radar (GPR) systems. This included extracting structured and unstructured data from hardware logs, telemetry data, and operational reports.
- Implemented data preprocessing pipelines in Python, using libraries like Pandas and NumPy to clean, normalize, and transform raw sensor data, ensuring it was formatted correctly for model training.
- Integrated data from multiple sources, including satellite telemetry, radar scans, and maintenance logs, to create a comprehensive dataset for machine learning models.
- Used data augmentation techniques to expand the dataset by generating synthetic samples through techniques such as GANs (Generative Adversarial Networks), which helped address the issue of limited real-world data.
- Developed custom scripts to automate the data collection process from remote databases and cloud storage, ensuring continuous data ingestion for real-time model updates.
- Analyzed the quality of data using EDA (Exploratory Data Analysis) and performed feature selection to identify the most relevant parameters that affected equipment failures.
- Collaborated with domain experts to refine data labeling processes, ensuring accurate tagging of anomalies and system malfunctions for supervised learning tasks.

Grainer (Undergrad Capstone) — Sep 2020 – May 2021

- Led the team as **project manager**. **Grainer website**
- Collaborated with faculty advisors and stakeholders to ensure the project met academic and sponsor expectations.
- Defined project scope, deliverables, and objectives, providing structure and direction to the team.
- Identified potential risks and implemented mitigation strategies to keep the project on track and avoid delays.
- Managed resource allocation, coordinating team efforts to ensure timely completion of tasks.
- Tracked project timelines and milestones, adjusting schedules as needed to ensure on-time delivery.
- Maintained the project within budgetary constraints set by the academic program, ensuring efficient use of resources.
- Conducted quality reviews, ensuring that final deliverables met academic standards and project goals.

Education:

- **Masters of Science** in Mechanical Engineering with Data Science Specialization **GPA 3.72** — **Sep 2022 – Aug 2024**
  University of Washington, Seattle, WA.
- **Bachelor of Engineering** in Mechanical Engineering (CS Minor) **GPA 8.13/10** — **Jul 2017 – Jul 2021**
  Thapar Institute of Engineering & Technology, Thapar University, India.

Leadership Activities:

- **Leadership Exchange Program Participant – AIESEC, Turkey**
  Collaborated with an NGO to promote cultural exchange and worked towards UNESCO's Sustainable Development Goals in education. Led educational workshops and facilitated cross-cultural understanding among participants.
- **Team Lead – Capgemini Technology Services**
  Supervised a team of analysts, driving process improvements and delivering key data solutions for Barclays Investment using 8D and Continuous Improvement methodologies.
- **General Secretary – Global Internship Council, Thapar University**
  Oversaw the council's activities, coordinated internships for students, and facilitated global opportunities.
- **Head of Media Team – Thapar University**
  Led a team responsible for managing the university's media communications, digital campaigns, and public relations.
- **Social Media Chair – Mechanical Engineering Graduate Association, University of Washington**
  Managed social media platforms for the association, promoting events and initiatives, and increasing student engagement within the graduate community.

Certifications:

- Certified Associate in Project Management (CAPM) – PMI

Languages:

English (Proficient), French (Basic), German (Basic)