SANTTOSH MUNIYANDY

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PROFESSIONAL SUMMARY

Engineering student with hands-on experience in the semiconductor industry at AMS OSRAM. Focused on improving product quality, reliability, and yield through test automation, real-time monitoring, and defect analysis tools. Skilled in Python, Power BI, and data systems to support fast and accurate root cause analysis. Actively looking for entry-level opportunities in Quality Engineering, Reliability, QA, or Automation to apply my technical skills in a real-world manufacturing environment.

EDUCATION

Universiti Sains Malaysia (USM) | Penang, Malaysia
Bachelor of Science (Hons), Major in Physics & Minor in Applied Data Analytics | October 2025

- CGPA: 3.43/4.0

PROFESSIONAL EXPERIENCE

AMS OSRAM | Penang, Malaysia
Product Yield Engineering Intern | March 2025 – Present

- Engineered and led the migration of a legacy manufacturing database to **Snowflake Cloud**, refactoring 30+ Power BI reports and cutting data refresh times by **40%**, directly improving analytics velocity for the yield team
- Automated critical ETL processes by building scalable **Databricks (PySpark)** notebooks, slashing data processing times by **75%** and eliminating hours of manual engineering work weekly
- Replaced a legacy 15-minute load time Excel tool by developing a **Python Dash web app**, delivering real time equipment KPI visualization and enabling immediate, data driven operational decisions
- Created a high-efficiency image compression pipeline **(>90% reduction**) to accelerate CCD-based defect inspection and reporting without compromising critical feature visibility
- Developed alerting scripts to ensure >90% uptime for **engineering and reliability dashboards**, supporting incident response and failure trend monitoring

TECHNICAL PROJECTS

- **Defect Prediction API:** Designed a FastAPI + Docker microservice to simulate real-time defect classification alerts, enabling proactive yield management
- **High-Throughput Quality Pipeline:** Developed a PySpark-based pipeline to process >1M reliability sensor records in <3 minutes, supporting SPC-based analysis and anomaly detection
- **Automated HALT Test Platform:** Engineered a Raspberry Pi monitoring system for HALT testing (thermal/vibration), visualized with Prometheus + Grafana for real-time failure observation
- **CI/CD for Reliability Tools:** Built GitHub Actions pipeline to automate testing & deployment for a custom reliability analysis toolkit, achieving 95% test coverage using Pytest
- **DFT Diagnostic Dashboard:** Created a Streamlit-based app to debug digital test simulation outputs, helping engineers identify failure-prone patterns in early product validation

TECHNICAL SKILLSET

- **Reliability & Quality:** Root Cause Analysis (RCA), FMEA, HALT/HASS, Failure Prediction Modelling (PyTorch), Control Charts (SPC), Failure Mode Simulation
- **Automation & Scripting:** Python (Advanced), C++, R, JavaScript, Pytest, Bash Scripting, OpenCV
- **Infrastructure & DevOps:** Docker, GitHub Actions (CI/CD), Git, Cloud Services (Snowflake, Databricks)
- **Monitoring & Observability:** Prometheus, Grafana, Custom Alerting
- **Data & Visualization:** SQL, PySpark, Pandas, Dash, Streamlit

CERTIFICATIONS & SELF-LEARNING

- **Six Sigma White Belt** – Coursera & OSRAM training
  Mastered the DMAIC methodology, process improvement tools, and how to reduce variation in manufacturing environments.
- **Statistical Process Control (SPC) Fundamentals** – OSRAM training, LinkedIn Learning & YouTube
  Learned to apply control charts, Cp/Cpk, and real-time monitoring to maintain stable production quality.
- **FMEA & Root Cause Analysis** – OSRAM training & Self-study (YouTube, blogs)
  Studied how to identify, rank, and prevent failure modes using structured tools like FMEA, 5 Whys, and Ishikawa diagrams.
- **Python for Yield & Quality Analysis** – GitHub & YouTube
  Used Python, Pandas, and real datasets to simulate defect tracking, equipment KPI dashboards, and automated analysis flows.
- **Quality Engineering Toolkit** – Self-curated from industry articles, PDFs & open trainings
  Practiced 8D problem-solving, CAPA process, MSA concepts, and practical QA tools used in the semiconductor industry.
- **Reliability Engineering Essentials** – Self-study (YouTube, ResearchGate & blogs)
  Learned key reliability concepts like MTBF, MTTF, HALT/HASS, and how to apply them to improve product lifetime and reduce failure rates.
- **Manufacturing Process Control Basics** – OSRAM training, Self-learning via PDFs & YouTube
  Covered process flow control, control plan basics, quality gates, and how to manage variation across production lines.