Jesco Tan Jiong Rui

Email: jesco_tan@mymail.sutd.edu.sg, Mobile: 98205553
Portfolio: www.jescotan.com, LinkedIn: https://www.linkedin.com/in/jesco-tan/

EDUCATION

Singapore University of Technology and Design (SUTD) — **Singapore**, **Sep 23 to Present**

- Bachelor of Engineering (Engineering Systems and Design in Society & Healthcare Informatics, Minor in Intervention in Design, Technology), Honours.
- Focus Track: Business Analytics and Operations Research.
- Expected Date of Graduation: May 2027.

WORK EXPERIENCE

GenEd, Co-Founder — **Jan 25 to Present**

- Developing an online learning platform integrated with Generative AI.
- Collaborated with the Malaysian government to build a personalized mentor chatbot for students.
- Awarded the S$6.000 Baby Shark Fund by the SUTD Venture Innovation and Entrepreneurship.

Wieland Metals Singapore, Intern — **Jun 19 to Dec 19**

- Operated in Rolled Product as a Process Engineer.
- Implemented Total Productive Maintenance in facilities, also researched into 6S Lean Management.
- Gained familiarity and skills in reading intricate machine schematics and cataloging.
- Brought forth ability to work well with others.
- Served as a dedicated and supportive Intern in a fast-paced environment.

ACADEMIC RESEARCH PROJECTS

Automated Materials Description Categorisation System — **Singapore**
SUTD, Data Analyst — **Jan 25 to May 25**

- Developed and implemented a robust Natural Language Processing (NLP) pipeline to automatically categorise material descriptions, streamlining data organisation and analysis.
- Engineered data preprocessing workflows, including dataset combination and comprehensive cleaning (removing punctuation, numbers, stop words, and short words), ensuring high-quality input for model training.
- Utilised TF-IDF Vectorization to transform raw text into numerical features, capturing key textual patterns for machine learning applications.
- Trained and evaluated a Random Forest Classifier for accurate category prediction, demonstrating proficiency in supervised machine learning model development and performance assessment (e.g., using confusion matrix, classification report, accuracy score).
- Automated model and vectorizer persistence using joblib for efficient deployment and future use, ensuring reproducibility and scalability of the solution.

Wieland-Werke AG & Duale Hochschule Baden Württemberg — **Germany**
Optimiertes Metallverarbeitungssystem, Process Improvement Analyst — **Aug 22 to Nov 22**

- Identified a significant production bottleneck caused by late detection of defects (black spots) on metal sheets after flattening process.
- Designed and implemented an automated defect detection system utilizing a custom-designed, high-heat resistant camera system to withstand extreme operating temperatures.
- Developed image processing algorithms to automatically scan underside of metal sheets and identify defects in real-time.
- Integrated system into production line, enabling early detection of defects and preventing further processing of unusable materials.

Wieland-Werke AG & Duale Hochschule Baden Württemberg — **Germany**
Optimierung der Metallspleißmaschine, Lean Manufacturing Analyst — **Aug 21 to Nov 21**

- Implemented 6S methodology across a designated set of metal splicing machines, resulting in a 15% reduction in workspace clutter.
- Led application of Kaizen and 6S Lean Management to optimize operation and maintenance of metal splicing machines.
- Developed and implemented standardized work procedures for machine operation and maintenance, leading to a 20% reduction in operator errors and 15% improvement in machine up time.
- Conducted root cause analysis on recurring machine downtime events and implemented corrective actions, resulting in a 12% reduction in unplanned downtime.

- Improved preventative maintenance schedules for metal splicing machines, leading to a 10% increase in meantime between failures (MTBF).
- Collaborated with cross-functional teams (operators, maintenance technicians, and supervisors) to identify and address process bottlenecks and improve overall equipment effectiveness (OEE).
- Contributed to a 14% reduction in defect rate through process optimization initiatives on metal splicing machines.
- Trained machine operators in new procedures and best practices, ensuring consistent application of improved processes.
- Documented process improvements and created training materials to facilitate knowledge transfer and sustain improvements.

Wieland-Werke AG & Duale Hochschule Baden Württemberg   **Germany**
Konstruktion und Dokumentation einer Glühmaschine, Lead-Assistant Analyst   **Aug 20 to Nov 20**
- Developed and refined documentation based on inspections, ensuring compliance and verifying part specifications.
- Verified component specifications and proper assembly through hands-on examination of machine.
- Gained practical experience in technical documentation and quality control for electro-mechanical systems.
- Vendor Management: Liaised with multiple companies to source and acquire necessary components, ensuring quality, timely delivery, and adherence to specifications.
- Training Coordination: Collaborated with various departments to develop and implement effective training programs for employees on machine operation and maintenance.
- Safety Analysis & Mitigation: identified and documented potential safety hazards associated with machine and contributed to developing solutions to mitigate their severity.

Temasek Polytechnic - Mitsuboshi Belting Ltd   **Singapore**
Increasing Efficiency of Production, Leader & Coder   **Apr 16 to Oct 16**
- Researched and developed a custom in house machine for automation to improve company's revenue.
- Created 3D-CAD and Engineering Drawings using Creo 3.0.
- Generated Bill of Materials.
- Programmed a factory machine for production use.
- Debugged factory machines to reduce time waste.

CO-CURRICULAR ACTIVITIES

House Guardians   **Singapore**
President & Housing Rep   **Jan 24 to Present**
- Served on a 6-member executive committee responsible for leading and coordinating activities for a 50-member organization.
- Took care of the welfare of 1100 residents in hostel.
- Represented entire student body in forums with the school's higher management on topics related to Housing.

ROOT – Student Government   **Singapore**
Student Relations Director   **Dec 23 to Feb 25**
- Operated together in a team of 5.
- Represented student body by bringing up academical feedback and issues to higher management.
- Collaborated with senior leadership to address and resolve challenges.
- Engaged with diverse student groups to understand and represent their needs.
- Organized events to foster community engagement and collaborative initiatives.
- Enhanced communication strategies to improve interaction with students and faculty.

ADDITIONAL INFORMATION

- Technical Skills: R, Excel, Python, C++, Sql, Javascript, Creo, Siemens NX, Git, Julia
- Language Proficiency: English, German, Mandarin, French, Italian
- Interests: Snowboarding, Wakeboarding, Technology