

# CHUA ZHENG LONG PIERS

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## EDUCATION

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### Temasek Polytechnic

*Dip. in Computer Engineering with Merit*

*Apr 2022 - May 2025*

- **CGPA: 3.96/4.0**
- *EP-Tec Solutions Prize (2025)*
- *2x Director's List Award (2023, 2024)*
- *Tan Agnes Jiannee Scholarship (2023)*

### Presbyterian High School

*GCE 'O' Level*

*Jan 2018 - Dec 2021*

## TECHNICAL SKILLS

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**Languages:** Python, JavaScript/TypeScript, SQL, Java, C, C++, C#, HTML/CSS, PHP

**Web Frameworks:** Next.js, React, Node.js, Flask, ASP.NET

**IoT & Embedded Systems:** Raspberry Pi, ESP32, IMU, MQTT, BLE

**Tools:** Git, Eclipse, JupyterLab, Arduino IDE, MPLAB, WSL, Tableau, LabVIEW, UiPath

## WORK EXPERIENCE

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### Geographic Information System Intern, HDB

*Apr 2024 - Aug 2024*

- Developed a pedestrian dead reckoning prototype using ESP32 and 9DoF IMU sensors to aid in mapping GNSS-denied areas
- Researched and implemented advanced algorithms in C++, correcting IMU drift and bias errors by up to 80%
- Applied post-processing techniques in Python for 2D and 3D trajectory visualisation
- Conducted repeatability tests to validate consistency and benchmark the performance of IMU data

## PROJECTS

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### Smart Recycling Bin | *Next.js, TypeScript, PostgreSQL, MQTT*

*Oct 2024 - Feb 2025*

- Built a gamification system integrated with AI-powered recycling bins, incentivizing users with points to boost recycling rates
- Developed a full-stack web-based portal and dashboard for administrators to monitor and manage key metrics of the recycling system

### SGJobMarket | *Java, PHP, MySQL*

*Oct 2024 - Feb 2025*

- Developed an Android application to streamline job hunting process, supported by a PHP-MySQL backend deployed on Atspace

### Wildfire Analysis | *Tableau, KNIME*

*Apr 2023 - Sep 2023*

- Designed a dashboard in Tableau with KPIs to visualise the impact of wildfires in the U.S. over the years
- Implemented logistic regression in KNIME to predict fire size class based on geographic and environmental factors

## LEADERSHIP EXPERIENCE

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### Temasek Polytechnic

#### Class Chairperson

*Apr 2022 - May 2025*

#### Peer Mentor, Peer Tutoring Programme

*Apr 2023 - Apr 2024*

#### Facilitator, Engineering Studies Club

*Apr 2023 - Apr 2024*