

Erick E. Shepherd

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Enterprise Software Engineer · Oracle Ecosystems · AI-Assisted Tooling

Enterprise software engineer — ~8 years across research, defense, and enterprise software, including ~5 leading the Oracle APEX and PL/SQL applications behind a national health-insurance underwriting pipeline — backed by a NASA atmospheric-research foundation and hands-on production AI integration. Oracle APEX Cloud Developer OCP. Introduced source control, CI/CD, and automated testing to a team that had none. Fully remote.

TECHNICAL SKILLS

- **Oracle:** APEX (OCP), PL/SQL, Oracle Database; stored procedures, packages, triggers, views; cx_Oracle / oracledb
- **Languages:** Python, PL/SQL, SQL, Java, JavaScript, C / C++, Fortran, MATLAB, HTML / CSS / PHP
- **Data & ETL:** pandas, NumPy, SciPy, scikit-learn, pytesseract (OCR), netCDF, PySpark, mpi4py
- **DevOps & Tooling:** Jenkins, GitHub / GitHub Actions, Liquibase, Docker, Linux, WSL, Bash, VSCode extensions
- **AI Tooling:** Claude & Cursor Composer (production integration), custom GPT models, KNN, Monte Carlo
- **HPC & Distributed:** SLURM, InfiniBand clusters, parallel / distributed computing
- **Other:** DSL design, dependency mapping (graphviz / networkx), geospatial analysis, self-hosted infrastructure

PROFESSIONAL EXPERIENCE

Application Development Advisor

Cigna Supplemental Health Services (via Magnit Global)

Remote · Aug 2021 – May 2026

- Lead developer on the quote-entry front end of the SHS underwriting pipeline (quote entry → contract generation), used by sales, pricing, and underwriting teams; core developer on the downstream contract-generation tool, across the full tenure.
- Designed and built a Python package managing every OracleDB environment, centered on a custom domain-specific language for ordered PL/SQL object compilation across environments — replacing an error-prone manual process; shipped a companion VSCode syntax-highlighting extension.
- **Co-designed the team's first CI/CD pipeline** (Jenkins) and led the Oracle APEX deployment-workflow integration; introduced GitHub source control, a branching strategy, and code review to a team that had none (repo admin across 29 repositories).
- Built a Python abstraction layer enabling **Claude and Cursor Composer to interface with enterprise OracleDB via a locally-running credentialed utility** — one of the team's first production AI integrations (credentials via Keyring + the oracledb driver).
- Authored an automated **MPE data-migration pipeline**: pandas parsing of unstructured Excel, embedded-image extraction to database BLOBs, and pytesseract OCR of rate tables into structured Oracle data, triggered on new uploads.
- Built an automated Python **test suite** for the Oracle APEX front end and PL/SQL backend; wrote the team's first automated deployment tooling and ETL / environment-validation scripts (pandas, requests, cx_Oracle).
- Mapped dependencies across **15+ internal applications** and hundreds of database objects (graphviz, networkx, netgraph) into architectural graphs delivered to leadership and documented in Confluence.
- **Theta Squad lead:** directed 4 developers — task delegation, code review, and technical direction.

Freelance Systems Engineer

Independent

Remote · Jul 2020 – Jun 2025

- Designed and prototyped IoT security devices: embedded firmware in **C and Python**, custom **PCB design**, and **sensor integration**.
- Delivered smaller contracts spanning web development, data automation, and systems integration.

Radar Systems Engineering Intern

Northrop Grumman Mission Systems

Baltimore, MD · Jun 2020 – May 2021

- Worked in a cleared defense-facility environment; obtained DoD Secret clearance.
- Gained experience with large-scale defense systems-engineering processes, documentation standards, and cross-functional team workflows. (NDA: no system or program specifics.)

Sally Ride & Dark Target Intern

NASA Goddard Space Flight Center — Climate & Radiation Laboratory

Greenbelt, MD · Jun 2019 – Dec 2019

- Streamlined ground-truth validation and algorithm improvement for the **MODIS Dark Target** aerosol retrieval product.
- Developed two Python tools filed as **NASA New Technology Reports** — an AERONET data-retrieval tool and a CONGRID N-dimensional interpolation module — eliminating a proprietary IDL dependency from the processing pipeline.
- Showed 12-hour GFS forecast fields are a suitable substitute for GDAS re-analyses in near-real-time retrieval; presented at the **AGU Centennial Fall Meeting (2019)**.

Advanced Computing in Earth Sciences (ACES) Intern

NASA Goddard Space Flight Center — Climate & Radiation Laboratory

Greenbelt, MD · May 2018 – Aug 2018

- Studied aerosol poleward transport using **CATS** and **CALIPSO** lidar observations; presented at the GSFC summer intern poster session.
- Completed the selective NASA/UVA ACES HPC bootcamp (20 students nationally): Python, Fortran 90/95/2003, MPI, OpenMP, SLURM.

Research & Teaching Assistant

UMBC Department of Physics — ACROS Group

Baltimore, MD · Aug 2017 – Jun 2020

- **Introduced Git/GitHub version control to the ACROS research group** — authored and delivered training; the team adopted it.
- Implemented a from-scratch **K-Nearest-Neighbors** algorithm to collocate MODIS cloud observations with NOAA sea-ice data on the **Taki HPC cluster** (SLURM, CentOS7, InfiniBand); part of NSF CyberTraining grant #1460652.
- Teaching assistant for Intro to Computational Physics (Python / NumPy, Monte Carlo methods, numerical integration): graded, held office hours, and led lectures.

EDUCATION

- **B.S. Physics — Coursework Completed (2 courses remaining)** — University of Maryland, Baltimore County. Degree completion in progress (UMBC Finish Line Program).
- **A.S. STEM, High Honors** — Frederick Community College (GPA 3.816). Martin Kalmar Award for Academic Excellence in Mathematics; Who's Who Among Students in American Colleges & Universities.

CERTIFICATIONS

- **Oracle APEX Cloud Developer — Oracle Certified Professional (OCP)** — Oracle University, 2023
- The Complete PL/SQL Bootcamp — Udemy, 2022 · Complete Python Course — Udemy, 2022

SELECTED PUBLICATIONS & INVENTIONS

- **2 NASA New Technology Reports** (inventions on record): Python AERONET Data Retrieval Tool; Python CONGRID Module, 2019.
- Conference work: AGU Centennial Fall Meeting (2019); MODIS/VIIRS Science Team Meeting (2019); NASA GSFC Intern Poster Sessions (2018, 2019); International Radiation Symposium (2020).
- Named contributor, "Enhancing Red Teaming with AI and ML," SANS HackFest Summit (2023) — custom GPT model (HackGPT).

SECURITY CLEARANCE

- **DoD Secret security clearance** — formerly held (2020–2021); eligible for reinstatement.