JER HESEOH R. ARSOLON

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LinkedIn | GitHub | Website

PROFESSIONAL SUMMARY

Multidisciplinary software and data science enthusiast with hands-on experience in full-stack development, machine learning, AI, and optimization. Adept in Python, C#, Java, and modern frameworks like React, FastAPI, and TensorFlow. Proven ability to deliver scalable solutions through academic research and real-world projects.

TECHNICAL SKILLS

Programming Languages
- Python
- Matlab
- R
- C#
- Javascript, Typescript (HTML, CSS)
- C++
- SQL

Data Analysis Tools
- Numpy
- Pandas
- SciPy
- Sciit-Learn

Database Management
- MySQL
- PostgreSQL
- MongoDB
- MariaDB

Version Control
- Git

Tech Stack
- Frontend: ReactJS, Angular
- Backend: Node.js with Express.js, ASP.NET MVC, FastAPI
- Database: MongoDB, Microsoft SQL, MariaDB

Containerization
- Docker
- Kubernetes

CI/CD
- GitHub Actions

RELEVANT COURSEWORK

Mathematics
- MATH 174: Numerical Analysis I
- MATH 175: Numerical Analysis II
- MATH 180: Probability Theory
- MATH 155: Advance Calculus
- MATH 195: Research Method in Mathematics

Applied Mathematics
- AMAT 170: Theory of Interest
- AMAT 160: Linear Programming
- AMAT 161: Non-Linear Programming
- AMAT 162: Integer and Dynamic Programming
- AMAT 163: Metaheuristics
- AMAT 167: Operations Research I
- AMAT 168: Operations Research II
- AMAT 105: Matrices and Applications
- AMAT 152: Fundamentals of Mathematical Computations

Computer Science
- CMSC 22: Object-Oriented Programming
- CMSC 127: File Processing and Database Systems
- CMSC 100: Web Programming

Physics
- APHY 10.1: Programming in Physics
- PHYS 101: Fundamental Physics I
- PHYS 102: Electromagnetism
- PHYS 103: Mechanics Waves, Optics and Thermodynamics

Statistics
- STAT 101: Statistical Methods

PROFESSIONAL EXPERIENCE

Tutor.com - Advanced Tutor (2022 - Present)

- Offer comprehensive tutoring in programming languages such as C#, C++, and Python and Fundamentals in mathematics, tailored to students from high school through college levels.

Elinnov Technologies - Software Engineer Intern (June 2024 - August 2024)

- Assisted in developing web applications using ASP.NET MVC and C#. Worked with both SQL and MongoDB databases to implement and manage data-driven features. Collaborated with senior engineers on coding tasks and project reviews.

Ross Media Group - Lead/Founding Machine Learning Engineer (July 2025 - September 2025)

- Led a team of machine learning engineers in developing ClipNET, an AI-driven livestream clipping engine that detects, edits, and shares viral moments in real time using Whisper, CLIP, GPT-4, and advanced scene analysis.

Stetho/Private Mirror (AI for Physicians) – Python Developer (September 2025 - October 2025)

- Developed AI for Physicians, an LLM-powered assistant that analyzed real medical conversations, extracted structured performance metrics, and generated coach-style feedback with explainable scoring and progressive disclosure.

PROJECTS

Optimizing Study Time for BS Applied Mathematics student at UPLB

- Used steepest descent method to improve academic performance. Developed practical tools and strategies for effective time management.

Harvesty: A Web Application for Agricultural E-Commerce

- A farm-to-table e-commerce app for the Department of Agriculture, connecting farmers and consumers with product listings, order tracking, and admin tools. Built with React, Express, and MongoDB.

Student Organization Management System (Database)

- A student organization management system with UI and full CRUD functionality, built using Python and MariaDB. It manages memberships, roles, fees, and generates detailed reports on member status and payments.

SmartDoc AI

- AI-powered document classifier that uses OpenAI embeddings to categorize PDFs, Word files, and images. It supports user feedback, retraining, and template-based keyword checks to continuously improve performance and handle edge cases effectively.

Job Tracker

- Lightweight job application management tool that helps users track, organize, and monitor their job search process. It allows users to log applications, update statutes, and visualize progress.

EDUCATION

University of the Philippines Los Baños

Bachelor of Science in Applied Mathematics *[GWA 1.76 - GPA Equivalent 3.24 (US)]*

- College Scholar (GWA 1.46) 2023 and University Scholar (GWA 1.43) 2025

UNDERGRADUATE RESEARCH PAPER

Geospatial Machine Learning for Predicting Banana Yield Gaps in the Philippines Under Climate Uncertainty

- This study uses six machine learning models to forecast banana yields in the Philippines under future climate scenarios, identifying cloud cover, wind speed, and vapor pressure as key drivers. The Cubist model performed best, projecting more yield gains under SSP2-4.5 and greater losses under SSP5-8.5, highlighting the need for climate adaptation.

CERTIFICATIONS

Associate AI Engineer for Developers

- Built AI-powered software by integrating APIs and open-source tools, gaining practical skills aligned with the Associate AI Engineer role.

Hyperparameter Tuning in Python

- Gained hands-on experience with Grid Search, Random Search, Bayesian Optimization, and Genetic Algorithms using Scikit-Learn to optimize machine learning models. Tuned models on credit card default prediction data to improve performance and efficiency.

SQL

- Learned to extract and organize data from relational databases using SQL. Gained hands-on experience with queries, database best practices, and variants like PostgreSQL and SQL Server.

Introduction to Deep Learning with Keras

- Built and tuned deep learning models for regression, binary/multiclass classification, and image reconstruction using Keras. Applied neural networks to real-world problems like asteroid trajectory prediction and counterfeit detection. Gained experience in model training control and performance optimization.

Introduction to TensorFlow in Python

- Developed and trained deep learning models using TensorFlow's high and low level APIs. Built applications in image classification, recommendation systems, and FinTech. Completed projects predicting housing prices, credit defaults, and sign language gestures.

Intermediate Importing Data in Python

- Extended data ingestion skills by importing data from web sources and APIs (e.g., Twitter streaming API). Built on prior experience importing data from flat files, Excel, Stata, SAS, MATLAB, and SQL databases.

Linear Classifiers in Python

- Trained, tested, and tuned logistic regression and support vector machines in Python. Gained practical skills and theoretical understanding of linear classifiers as a foundation for broader machine learning concepts.

Reinforcement Learning with Gymnasium in Python

- Explored core principles of reinforcement learning by training intelligent agents to make strategic decisions. Applied RL algorithms to environments like FrozenLake and MountainCar using OpenAI Gym.

Supervised Learning with scikit-learn

- Built and tuned predictive models using real-world datasets in scikit-learn. Gained hands-on experience with classification and regression tasks, including customer churn, diabetes prediction, and music genre classification.

Unsupervised Learning in Python

- Applied clustering, dimensionality reduction, and matrix factorization techniques to uncover patterns in unlabeled data. Used scikit-learn and SciPy to build models for customer segmentation, text analysis, and a music recommender system.

Understanding Machine Learning

- Developed a foundational understanding of machine learning concepts, applications, and terminology. Explored the differences between AI and ML, and how ML powers real-world tools like recommendation systems and self-driving cars no coding required.