Kevin Nguyen

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Website: Kevin Nguyen's Portfolio | Atlanta, Georgia (Open To Relocate)

OBJECTIVE STATEMENT

Passionate Chemical Engineer with expertise in machine learning, thermodynamics, fluid dynamics, and electrochemical systems. Eager to apply data-driven problem-solving to optimize energy storage and chemical processes.

EDUCATION

Georgia Institute of Technology, Atlanta, GA — December 2024
Bachelor of Science in Chemical and Biomolecular Engineering — GPA: 3.41/4.00
Minor in Computing & Intelligence

EXPERIENCE

Operations Consultant, *Shiplify* — June 2024 - Current

- Handled geocoding, polygon mapping, and location typing for 200+ daily shipments to **improve ML model**
- Optimized shipment data accuracy, preventing costly misclassifications and saving partnered LTL carriers thousands of dollars in unnecessary fees.

Advanced Graphene Battery Research — January 2024 - December 2024

Graphene Separator for Enhanced Li-Metal Battery Performance

- Synthesized graphene via **anodic exfoliation** for use as a separator in lithium metal batteries.
- Characterized exfoliated graphene properties using **Raman spectroscopy** and **X-ray photoelectron spectroscopy** to assess structural and chemical composition.
- Analyzed the impact of **separator thickness** on battery performance and identified **fabrication challenges** that influenced **capacity and coulombic efficiency**.

Graphene Oxide-Enhanced Li-ion Battery Performance

- Prepared **heat-treated and pristine graphene electrodes** for battery testing
- Conducted **cyclic voltammetry and charge/discharge profiling** to assess **electrochemical behavior and energy efficiency** of graphene-based batteries.

PROJECTS

Modeling Syngas Production (Data Analytics) — August 2024 - December 2024

- Developed predictive models using **linear and nonlinear regression in Python** to forecast syngas production across various methane reforming reactors.
- Applied PCA regression for feature selection, **increasing R2** by an average of 0.24 compared to the base model.
- Compared algorithms **(e.g., KRR, Neural Networks)** to identify the best methods for reactor performance prediction, improving model robustness.

Sugarcane-Based Butyl Acrylate Production (Capstone) — January 2024 - August 2024

- Designed and optimized a sustainable butyl acrylate production process, determining the optimal number of fermenters and precipitators.
- **Evaluated process efficiency**, including Thiele modulus, selectivity, and yield, to improve performance and feasibility.
- Assessed **carbon footprint and heat integration**, **optimizing energy use** and **sustainability** in alignment with BASF's environmental goals.

AI & Robotics Projects — January 2023 - December 2023

- **Autonomous Robotics Car:** Built and programmed an autonomous car using **Arduino** and **C++** with obstacle avoidance (distance sensor and camera).
- **Pac-Man AI:** Developed Pac-Man AI using **search algorithms and reinforcement learning** in Python to navigate and avoid ghosts.

SKILLS

Programming: Python, Java, C++, MATLAB, LUA, Assembly
Data Science: TensorFlow, Scikit-Learn, Jupyter Notebook, Pandas, NumPy
Modeling & Simulation: Simulink, ASPEN PLUS, Webots, AutoCad, SolidWorks
Instrumentation: NMR, IR, Raman, X-ray Spectroscopy, Recrystallization, Acid-Base Extraction, Arduino
Soft Skills: Communication, Teamwork, Problem Solving, Time Management, Critical Thinking