

ZACK EDDS

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EDUCATION:

University of Illinois Urbana-Champaign, Grainger School of Engineering

Bachelor of Science in Computer Science, Expected May 2026. GPA 4.0

Oakton College, Aug. 2022 to May 2024. GPA 4.0

WORK EXPERIENCE:

UIUC Undergraduate Research Assistant–Artificial Intelligence/Computer Vision June 2024 to present

Synthesized human hand-object interaction under the guidance of Professor Saurabh Gupta, who specializes in computer vision, robotics, and machine learning.

- **Adapted a transformer** based algorithms for 3D hand reconstruction.
- Crafted and conducted experiments to **test and analyze** poses, using **linear regression** for distance mappings.
- Integrated accelerometer and gyroscope data to capture degrees of freedom, segmenting hand features from images to **train robotic policies**.
- Presented research findings at the **UIUC Research Symposium**.

U.S. Department of Energy - Computer Science Intern

May 2023 to August 2023

Argonne National Laboratory, Lemont, IL

Worked on the AFLEET (Alternative Fuel Life-Cycle Environmental and Economic Transportation Tool) team for the carbon emissions web app. Built interactive **Svelte front-end** for **electric vehicle charging calculator** metrics based on an **API** call. Used **Git** to contribute code and fix bugs. Analyzed **SQL** database and wrote queries to build electrical rate tables. Optimized model with advanced data validation, EV charging algorithm, and data visualization. Found and notified the United States Utility Rate Database of a critical flaw within their database.

LanzaJet Inc., Deerfield, IL – Software Engineering and Finance Intern

June 2022 to present

LanzaJet is a sustainable aviation fuel company. Started as a summer intern, then hired to work part-time during the school year.

Built **Python** program to generate jet fuel and commodity market statistics with **Matplotlib** charts/graphs with data from **XML based SOAP API**, **JSON based REST API**, and **web scraping with BeautifulSoup**. Shared results weekly with **Power Automate**.

Automated the extraction of commodity metadata for financial modeling from the API, writing parameters to a **JSON** file. Wrote Python program to request the parameters, then performed data analysis with a **Pandas DataFrame**.

Led multi-functional teams in design and built refinery Sample Lab Test Inventory system using **MS Power Apps**. Secure input forms interface with a **Dataverse database**. Data then feeds **into AVEVA PI Vision** or can be downloaded into Excel.

PROJECT HIGHLIGHTS

Graffiti Spot App

- Developed a **SwiftUI iOS** app to catalog graffiti at UIUC
- Saved picture, name, description for each work with **SwiftData**
- Used **MapKit** to display art locations

Trading Paper Stock App

- **Flask web app** with Yahoo Finance API for real time data
- **Google Cloud Platform** hosted **MySQL database**
- Advance **SQL queries** for trading leaderboards

TECHNICAL SKILLS

Languages & Technologies: Swift, Python, ML Libraries, C++, Java, SQL

Skills: Data Visualization, Database Management, Web Development, Automation Pipelines, Git, Advance Excel Dev