Jesse Anderson

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Education

University of Illinois at Urbana Champaign / Master's in Computer Science **August 2025**
University of Illinois at Chicago / BS Chemical Engineering **May 2023**
GPA: 3.77 | Concentrations: Biochemical Engineering and Process Automation | Minor: Mathematics & Computer Science.

Skills

- Python, R, MATLAB, SQL(MongoDB/PostgreSQL), Julia, C++, CUDA VBA/VB, Markdown, Git, Tableau/Power BI
- Pandas, sklearn, PyTorch, numpy, openCV, flask, BeautifulSoup, GCP/pyMongo/PostgreSQL APIs
- Machine Learning(Classification, Regression, Clustering, CNN, RNN, NLP), LLM(local), GPU/Parallel Computing
- IoT, circuit design, Raspberry Pi, Arduino, ESP32, blueprint interpretation and parts diagram reading.
- Strong problem-solving and analytical skills, adept at translating business requirements into actionable deliverables.

Experience

UL Solutions

Engineer June 2023-April 2024

- Design automation software in Python and VBA to eliminate 500+ hours of tedious workflows annually.
- Develop Python software with OpenCV/PyMuPDF to automatically detect and alert engineers of changes in CAD files.
- Establish ETL pipeline to reduce redundant analytical tasks by 240-555 hours per year dependent on incoming work.

UNIVERSITY OF ILLINOIS AT CHICAGO

Undergraduate Research Assistant[Programmer] December 2020-June 2023

- Authored Matlab/R/Python code for biological image analysis and clustering (DBSCAN/OPTICS/Ripley's K)
- Published in a variety of journals including Scientific Reports, Bioconjugate Chemistry, and Biophysical Journal.

UNITED CONVEYOR CORPORATION

Summer Engineering Intern[Conveyor & Piping Support Design] May 2022-August 2022

- Pioneered software to automate 150 hours/yr of data entry, comparison and analysis tasks.
- Developed a software library for analyzing thermoplastic and thermoset properties to ASME/AWWA/PPI standards.

G5 ENVIRONMENTAL

Safety/Project Manager June 2016 - August 2019

- Served as project lead at job sites by ensuring completion of contract requirements by CDL team members.
- Ensured safe execution of any mechanical repairs by mechanics.

Projects

Pi Environmental Monitor Interactive Database**[May 2024]**
Developed a web-based ETL pipeline to monitor and visualize environmental data using a Raspberry Pi and DHT11 sensor. Collected data was pushed to MongoDB, PostgreSQL, ThingSpeak, and Google Sheets. The web interface dynamically displayed real-time temperature and humidity data in tabular and graphical formats.

VAE-GAN**[University of Illinois at Urbana-Champaign][April 2024-May 2024]**
Train a Variational AutoEncoder Generative Adversarial Network to generate images from the MNIST dataset prior to training a Denoising Autoencoder, Variational Autoencoder, and Generative Adversarial Network.

Senior Design Project**[University of Illinois At Chicago][December 2022-May 2023]**
Designed a bio-based process using *Lactobacillus reuteri CH53* which reduces crude glycerol and corn dextrose to 1,3 propanediol. Significantly reduced costs, process hazards, and losses compared to the current Susterra DuPont process.

Publications

Saed, B., Ramseier, N. T., Perera, T., **Anderson, J.**, Burnett, J., Gunasekara, H., Burgess, A., Jing, H., & Hu, Y. S. (2024). Increased vesicular dynamics and nanoscale clustering of IL-2 after T cell activation. Biophysical Journal. https://doi.org/10.1016/j.bpj.2024.03.029