

Richard Álvarez

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About Me

I am a researcher and web developer combining experience in filmmaking, machine learning, and visual design to create engaging digital experiences and amplify meaningful stories. I have created over 17 unique open-source projects and authored two papers with over 400 cumulative downloads. I also enjoy reading, listening to music, visiting local theaters, and cycling.

Education

New York University (NYU) Tandon School of Engineering

Master of Science in Computer Engineering

Brooklyn, New York

Aug 2025

Kenyon College

Bachelor of Arts in Film; GPA: 3.4/4.0

Minor in History and Concentration in Integrated Program in Humane Studies

Gambier, Ohio

Aug 2020 – May 2024

Authored two papers on machine learning applications in creative industries. Produced and edited over 15 experimental video projects, including music videos, audio-reactive visualizations, and short films.

Relevant coursework includes Senior Research Seminar (IPHS 484), AI for the Humanities (IPHS 300), Advanced Post-Production (FILM 391), Data Structures and Program Design (SCMP 218), Digital Photography (ARTS 321), Sex, Drugs, Guns: Research Strategies in the Contemporary Age (INDS 140), and Software Development (SCMP 318).

Work Experience

IT Assistant

Library and Information Services (LBIS), Kenyon College · Part-time

Gambier, Ohio

Sep 2023 – Feb 2024

I supported campus-wide technology needs by preparing workstations, moving office tech, and securely erasing and recycling equipment. I restocked printers daily. I conducted classroom checks under the guidance of team members. I streamlined team projects by applying programming skills, in one instance by generating a spreadsheet of course meetings and classroom locations to determine when our techs could perform maintenance.

Video Editor

Kenyon College · Contract

Gambier, Ohio

Apr 2022 – May 2022

I condensed over 30 hours of interviews into a concise 10-minute recap for the John W. Adams Summer Scholars Program in Socio-Legal Studies. I crafted a polished visual presentation that adhered to Kenyon's Visual Identity System. I highlighted key interview themes while ensuring balanced representation of all participants. I delivered the final product on schedule in an optimized format, maintaining professional collaboration with the employer throughout the project.

Research Assistant

University of Chicago · Part-time

Chicago, Illinois

Aug 2018 - Nov 2019

I worked under Bernard Dickens III on an academic paper proposing strategies to protect against supply-chain attacks and ensure file integrity using advanced checksum technologies. I attended monthly code reviews and contributed 27 commits to the repository.

Publications

Unsupervised Deep Learning and PySceneDetect Analysis | [GitHub](#) | [Digital Kenyon](#) | May 23rd 2023

This research focused on analyzing short-format video editing trends by leveraging PySceneDetect and unsupervised deep neural networks. Advanced data visualization techniques, including t-SNE and PCA, were employed to uncover patterns and gain insights into the editing styles and trends prevalent in the dataset.

Certificates

CompTIA ITF+ Sep 2024

NYU Tandon Bridge Mar 2025

Skills

Programming: Python, JavaScript/TypeScript, SQL, C++

Frameworks: Next.js, React, Tailwind CSS, scikit-learn, LangChain

Visualization: After Effects, Cinema4D, Blender, Tableau, d3.js

Open-Source Research: Metadata analysis, web scraping, geospatial tools (Geopandas, Mapbox)

Websites

Machine Television <i>Online Store</i> Developed a functional e-commerce platform for an independent skate brand. The site was built using Next.js and Tailwind CSS for an intuitive front-end, paired with Node.js for a robust back-end infrastructure. Integrated Stripe API for seamless payment processing, optimizing user workflows across desktop and mobile.	Visit Site Oct 2024
Joaquin Morales <i>Portfolio</i> Designed and deployed a dynamic portfolio site for a professional cinematographer. The project used Next.js for high performance, with Tailwind CSS for responsive design. Implemented a custom CMS to enable efficient content updates, managing galleries and testimonials with ease. Leveraged DigitalOcean S3 storage for scalability and fast load times for video and photo content.	Visit Site Jan 2025
GREasyVocab Flashcards <i>Web App</i> Created a personalized GRE vocabulary tool powered by OpenAI's APIs. The application leverages LangChain to provide personalized prompts tailored to user inputted data. Developed a secure full-stack system with user authentication and database management, ensuring a smooth and customized learning experience.	Jul 2024

Portfolio

Editor <i>Freelance</i> <ul style="list-style-type: none">Indie Sleaze (2024) – Directed and produced senior thesis film, managing narrative structure and visual consistency.Performing the Primitive (2023) – Reviewed footage for Sam Pack.Summer Legal Scholar Recaps (2022) – Produced professional video content for Ric Sheffield, refining footage for clarity and engagement.	2022 – Present
Music Video Producer <i>Various Collaborations</i> <ul style="list-style-type: none">trees by GRAYS (2023)Live, Laugh, Kill by JvneBvg (2022)Rick and Morty by Black Yoshi (2021)Poltergeist by Souley (2021)No Rulez by InVoid (2021)Ghosts by Undercurrent (2020)	2020 – Present
Script Supervisor <i>Jasmine</i> Maintained narrative and technical consistency on set.	July 2024
Production Assistant <i>Shopping for Superman</i> Assisted on-set logistics and maintained production schedules.	May 2024

Additional Projects

A Retrieval-Augmented Film Recommendation System GitHub Digital Kenyon May 8th 2024 This project utilized LangChain's OpenAI integration to dynamically generate queries based on user preferences, showcasing the potential of advanced AI and machine learning in digital entertainment. The Retrieval-Augmented Film Recommendation System was developed using Node.js and integrated with the OMDb and TMDb APIs to enhance movie metadata, delivering precise and personalized recommendations.
AI-Driven Kubrick-Inspired Film Script Generation GitHub Designed and developed an AI pipeline to generate film scripts inspired by Stanley Kubrick's cinematic style. Leveraging Dust.tt and Large Language Models, I created a custom API to enable dynamic and stylistically consistent script generation. This project demonstrated the potential of generative AI for creative industries, producing scripts that emulated Kubrick's distinctive narrative and thematic characteristics.
Sentiment Analysis of Rotten Tomatoes Reviews GitHub Conducted a sentiment analysis of user reviews from Rotten Tomatoes to evaluate the psychology of movie consumers and the reliability of the platform's 'freshness' indicators. Using VADER and the NLTK library, I processed text data by filtering stop words, tokenizing reviews, and extracting sentiment scores. The analysis revealed that 73 of user reviews aligned with their assigned 'freshness' labels, validating both the reliability of Rotten Tomatoes user ratings and the effectiveness of the VADER sentiment analysis tool. Findings were presented in detailed visual reports, highlighting correlations between sentiment and user ratings.

Mapping Migration: Open-Source Visual Investigations into Refugee Integration

Proposed Project for SITU Research

This project explores the migration and integration patterns of refugees from Ukraine and Venezuela in Chicago, focusing on disparities in placement, access to city infrastructure, and federal enforcement actions. It leverages open-source investigation techniques to examine how refugees transition into urban systems, tracking ICE activity and identifying patterns of enforcement.

Key Methods and Tools

- Web scraping public datasets (e.g., news outlets, city reports, ICE records) using Python libraries like BeautifulSoup and Scrapy, combined with natural language processing (NLP) to extract key insights from text data. This enables the rapid aggregation of information about refugee demographics, resource availability, and enforcement patterns.
- Using advanced NLP techniques with LLMs, including named entity recognition (NER) and sentiment analysis, to identify geographic locations, trends in refugee experiences, and policy themes from large datasets. For example, parsing city council minutes or deportation notices to detect disparities in resource distribution or enforcement practices.
- Building machine learning pipelines with scikit-learn for clustering refugees based on attributes such as housing access or economic integration. These models can help detect systemic patterns that would otherwise remain hidden in raw data.
- Mapping refugee placement and ICE operations with foundational geospatial tools like Mapbox or Python's Geopandas. By overlaying these datasets, we can identify areas of concentrated enforcement activity or insufficient infrastructure, providing actionable insights.
- Developing interactive, web-based dashboards using tools like three.js or d3.js to visually represent data trends. For instance, creating timelines of enforcement events or heatmaps of refugee settlement to highlight correlations and inequities.
- Integrating metadata analysis and reverse image search techniques to verify multimedia sources, enhancing data reliability and accountability when analyzing sensitive content such as deportation footage or site-specific evidence.

These processes provide a granular understanding of refugee placement, infrastructure access, and enforcement targeting. By connecting spatial and contextual data, the project uncovers patterns critical for advocacy, legal challenges, and policy reform—offering tools and insights beyond standard geospatial or investigative approaches.

Impact: This project aligns with SITU Research's mission by using cutting-edge tools to amplify truth, promote equity, and address urgent human rights issues. It reflects a deep curiosity for mastering new technologies while demonstrating proficiency in integrating data science, geospatial analysis, and visual storytelling to support advocacy efforts.

References

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