

# Oscar Wu

Link to Portfolio Website [↗](#)

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## PROGRAMMING SKILLS

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• **Languages:** Python, Bash, SQL, Markdown, R

**Technologies:** Git, VS Code, Tableau, Obsidian, Zotero

## PUBLICATIONS

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- **Zanoaga O, Jurj A, Raduly L, et al.:** Implications of dietary  $\omega$ -3 and  $\omega$ -6 polyunsaturated fatty acids in breast cancer. *Experimental and Therapeutic Medicine*. 2018;15(2):1167-1176. doi:10.3892/etm.2017.5515. [↗](#)

## HONORS & AWARDS

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- **National Honors & Awards:** Phi Beta Kappa Honor Society, **National Barry S. Goldwater Scholar** (from previous research in Dr. Laurie Glimcher's laboratory at Dana-Farber Cancer Institute.) See here: [↗](#)
- **Research/Service Honors & Awards:** UTSW Medical Student Summer Research Program, Best Poster Award for Community Development/Public Service by the AMA, Outstanding Contribution to the Greater Community Award, 2nd Place Poster at Molecular Neurosciences & Systems: From Nucleotides to Networks Symposium, Best Visual Presenter-Biosciences Division of Gulf Coast Undergraduate Research Symposium, Student Organization of the Year, Raiders Who Rock Cooperation & Communication Award, College Group Get Involved Award, Outstanding Contribution to the Greater Community Award

## RESEARCH EXPERIENCES AT UT SOUTHWESTERN MEDICAL CENTER

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- **GPTFusion - AI Chatbot** [↗](#)
  - *Multi-Model Integration & Dynamic Interactions* *Dept. of Radiology (2023)*
    - **Document Integration:** Tailored document integration and conversation history management with Gradio, Python, and OpenAI API.
    - **Vector Index:** Efficiently ingested unstructured data from PDFs, CSVs, TXTs, and SQL databases files.
    - **File Subsets:** Enabled users to specify subsets of ingested files for NLP operations.
    - **Conversation History:** Extended GPT API to retain and call prior user-defined prompts and responses.
  - **Advanced Facial Image Morphing** [↗](#)
    - *Latent Space Interpolation with StyleGAN2 & Dlib ResNET* *Dept. of Radiology (2023)*
      - **Pipeline:** Developed an end-to-end pipeline for smooth morphing video generation.
      - **StyleGAN2:** Produced realistic and high-quality face morphing videos.
      - **Facial Landmark Detection:** Automated detection and cropping for improved compatibility.
      - **Google Colab:** Implemented a seamless pipeline with GPU support for widespread use. [Link to notebook](#) [↗](#)
  - **Socioeconomic Impact of COVID on Parkland ED Patients** [↗](#)
    - *COVID 2020 Time Series Analysis* *Dept. of Global Health (2022)*
      - **Health Equity Index:** Identified areas of highest need to advance equitable outcomes.
      - **Advanced Time Series Techniques:** Used ClaSP segmentation and Dynamic Time Warping for structural changes and optimal alignments.
      - **Population Patterns:** Examined trends during shelter-in-place duration and recovery.
      - **Data Analysis:** Utilized heatmaps, warping path plots, and Pearson correlation for patient data analysis.

## PROJECTS

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- **An End-to-End Pipeline for Scientific Writing** [↗](#)
  - *Multi-tool and Multi-language Optimization of Literature Reviews* *2023*
    - **Multi-Language Support:** Integrated multiple programming languages (JavaScript, Python, SQL) and research tools (Obsidian, VS Code, Zotero) to create an efficient and unified research workflow.
    - **OCR with PyTesseract:** Extracted corpus of research text from images and PDFs and indexed for quick access.
    - **Links and Knowledge Graph:** Connected notes, visualized relationships, and applied graph algorithms for community detection of important research topics.
    - **Git Synchronization and Ubiquitous Exports:** Automated file sync with Git, GitHub and exported documents linked to BibTeX references in Zotero.

## EDUCATION

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- **University of Texas at Southwestern School of Medicine** Dallas, TX
  - *M.D. Candidate (522/528 MCAT)* *Aug. 2020 – May 2023*
- **Texas Tech University (Combined BA/MD Program)** Lubbock, TX
  - *BS in Microbiology, Summa Cum Laude (3.97/4.00 GPA)* *Aug. 2016 – June 2020*
- **Margaret Long Wisdom High School** Houston, TX
  - *Valedictorian, National Merit Finalist (2380/2400 SAT)* *Aug. 2012 – May 2016*