Tom Gorbett

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PROFILE

AI Developer specializing in designing, developing, and implementing advanced AI-driven solutions, with extensive expertise in leveraging OpenAI APIs, Retrieval-Augmented Generation (RAG), and various Azure cloud services. Skilled in Python, TypeScript, and full-stack development, delivering projects that streamline business operations, enhance user experience, and foster technological innovation. Demonstrated ability to create dynamic applications such as intelligent chatbots integrated with organizational documentation, real-time project monitoring tools, and robust continuous integration/deployment workflows. Experienced in conducting regular team briefings on emerging AI trends, mentoring colleagues, and strategically positioning teams to capitalize on the latest advancements in artificial intelligence. Passionate about creatively solving complex challenges through technology, with a consistent record of successfully translating business requirements into impactful technical solutions.

PROFESSIONAL EXPERIENCE

Velosio **Colombus, Ohio (Remote)**

AI Developer *January 2024 – Present*

- Developed and maintained Retrieval-Augmented Generation (RAG) chatbots connected to organizational documentation, enabling dynamic customer support and providing users with hyperlinked references directly to relevant documentation and Microsoft Power BI dashboards.
- Created an AI Suite demonstrating diverse artificial intelligence capabilities, including but not limited to Natural Language Querying (NLQ), documentation generation, sentiment analysis, and transcription.
- Designed and deployed a TypeScript application integrating with Azure DevOps APIs to provide real-time project status monitoring, significantly enhancing transparency and project management efficiency.
- Automated complex data workflows through Python scripting, including the seamless migration of millions of images via APIs and automation of data source updates across hundreds of Microsoft Power BI reports.
- Developed Azure Function Apps employing LLMs to implement iterative sorting and evaluation processes for jury participant distribution, as well as integrated AI-driven summarization, translation, and transcription capabilities within Electronic Health Record (EHR) systems.
- Built a comprehensive AI-driven survey analysis tool providing sentiment analysis through dynamic dashboards, enabling actionable feedback and improved decision-making.
- Provided strategic advisement and technical troubleshooting on AI implementation, including Copilot Studio configuration, best practices for data querying solutions, and guidance on AI governance frameworks and roadmap planning.
- Delivered targeted troubleshooting and educational support in Python and R, addressing clients issues from statistical analysis to environment troubleshooting.
- Conducted regular briefings and educational sessions on emerging AI trends, techniques, and governance, equipping teams and clients to effectively leverage advanced AI technologies.
- Facilitated the integration of Microsoft Fabric and Git for enhanced change management processes through Azure DevOps, ensuring rigorous control and streamlined approval workflows.
- Utilized Azure services extensively, including AI Foundry, Web Apps, Function Apps, Storage Accounts, Key Vaults, and other AI Services to host and manage applications securely and efficiently.
- Primarily use DevOps and GitHub for continuous integration and continuous deployment (CI/CD), maintaining best practices in version control.

Cleveland Clinic Foundation **Cleveland, Ohio**

Pathology & Lab Medicine Institute ***April 2021 – January 2024***

Data Scientist *April 2021 – January 2024*

- Research and Development
  - Contributed to the development of an IV contamination prediction model using AutoML. Developed thousands of models and evaluated them based on PPV among other metrics. Achieved results that outperformed previous studies from Mayo and MGH.
  - Spearheaded a study on AI detection difficulty through the analysis of historical abstracts from 1980-2020 on PubMed. Used BeautifulSoup for web scraping and huggingface's transformers package with OpenAI's RoBERTa-based AI detector. Observed trends in AI detection with changing linguistic patterns over decades. Listed as contributing and the last author.
  - Participated in an ongoing study aiming to create an image classification model for the identification of Celiacs disease using duodenal biopsy WSIs.
  - Co-authored a published review paper on machine learning in pathology.
  - Contributed to a study on using AutoML for predicting indeterminate lupus, providing backup support.
  - Engaged in a research initiative using the STNG synthetic data generator, analyzing performance metrics across iterations and platforms.
- Software Development
  - Participated in the SDLC of the STNG platform for generating tabular synthetic datasets via neural networks. Contributions included code review, bug identification, and LDAP authentication.
  - Developed a TypeScript application for k-means cluster analysis, allowing users to visualize clustering patterns through interactive visuals such as silhouette scores, elbow plots, and 2D/3D scatter plots.
  - Contributed to the creation of a hematology-focused chatbot by writing Python scripts to scrape relevant articles online.
  - Assisted in setting up LLMs like Meta's Llama2 on a Linux HPC.
  - Designed and developed a Python email program for automated recurring data extracts. Integrated functions to loop through tables, call views, and send out styled emails with attached data extracts.
  - Managed work within Azure DevOps Git environment as well as an Anaconda environment.
- Business Analysis
  - Provided ongoing support of time-sensitive, ad-hoc reporting through comprehensive SQL queries simultaneously utilizing Microsoft, Oracle, and Teradata DBMS.
  - Managed organization of PLMI Tableau environment which had 35 projects, 207 workbooks, 41 groups, and over 100,000 views among 614 unique users.
  - Built and maintained various Tableau dashboards to support pathologists and lab techs.
  - Used data from the Epic EHR with a focus in the Beaker module.

Emergency Services Institute ***July 2018 – April 2021***

Data Scientist *January 2020 – April 2021*

- Provided statistics for various research papers, including the role of EMS in a pandemic.
- Worked on a claim denial prediction model.
- Managed the work of two interns from May 2020 to April 2021.

Operations Analyst *July 2018 – January 2020*

- Used data from the Epic ASAP module among other sources.
- Automated assorted procedures including ETL from SSMS to Teradata, ETL FTP'd Excel files from a mounted folder through SAS, among other reports.
- Managed access to ASAP data source through an automated SAS emailing system utilizing HTML and CSS.
- Built and maintained Tableau dashboards to support physicians and administration.
- Acted as the team's Jira Administrator, handling the setup of Kanban boards and other Agile functionalities.
- Provided ongoing support of time-sensitive, ad-hoc reporting through comprehensive SQL queries.

Supply Chain Management ***January 2016 – July 2018***

Information Systems Coordinator *July 2016 – July 2018*

- Maintained data of locations, end users, approval codes, among other areas across the ERP.
- System administrator of EDI transmission and setup, including managing accounts for over 300 different vendors.
- Automated and created new processes for cleaning data and more accurate data entry using SQL Server Agent and custom queries.
- Worked closely with pharmacy team for setup unique to pharmaceutical products, including setup of custom approval codes, locations, and setup specific to 340B and WAC.
- Implemented and maintained systems at new hospital acquisitions.
- Uploaded Purchase Orders into the ERP system with an average of a million dollars per month.
- Archived Purchase Order lines from RNI with an average of a million dollars per month.

Supply Chain Co-Op *January 2016 – July 2016*

- Worked with Sourcing Director and Analyst to analyze and redistribute pandemic equipment.
- Working with Senior Sourcing Analyst on RFPs to standardize medical carts.
- Working with Senior Business Analyst to develop Data Management guide for new analysts.
- Developed RFP for insulated shipping containers with Sourcing Director and Senior Analyst.
- Standardized data for tens of thousands of clinical products.

Sea-Land Chemical Company **Westlake, Ohio**

Intern *July 2012 - August 2015*

- Worked full time in Product Management, Logistics, and Marketing departments during summer and winter breaks.
- Assembled research reports on different commercial chemicals to help drive revenue.
- Refined contact database for uploading into Constant Contact.
- Acquired quotes from vendors and scheduled daily pick-ups.
- Maintained product data in ERP.
- Found accounts with most variance and contacted account managers for explanation.

SKILLS

- **Python** – Proficient with packages relating to data manipulation and machine learning.
- **TypeScript** – Proficient creating fully functioning web applications in the Angular framework.
- **Azure** – Proficient with Azure services including Web Apps, Function Apps, Azure OpenAI, AI Foundry, Storage Accounts, Key Vaults, Azure DevOps, and Azure Pipelines for continuous integration and deployment.
- **SQL –** Proficient with Teradata, T-SQL, PL/SQL including but not limited to the creation of tables, views, stored procedures, functions.
- **Firestore** – Proficient in using Firebase for data storage and as well as authentication services.
- **SAS –** Proficient with SAS in use of ETL, including but not limited to proc import, proc sql, macro looping.
- **Tableau** – Created and maintained dashboards for Cleveland Clinic with hundreds of thousands of views.
- **Microsoft Suite** – Proficient with all Microsoft Suite products including but not limited to Excel, Access, PowerPoint, and familiar with Visual Basic.

CERTIFICATIONS

- **AZ-900**: Azure Fundamentals
- **AZ-204**: Azure Developer Associate
- **AI-900**: Azure AI Fundamentals
- **AI-102**: Azure AI Engineer Associate
- **DP-203**: Azure Data Engineer Associate

RELEVANT SIDE PROJECTS

- **tomgorbett.com**: Developed a personal portfolio website to showcase projects, highlight professional experience, list published research, and share insights on generative AI and web development through detailed blog posts.
- **beautyisapattern.com**: Developed a simple website that pulls a random quote each night, and asks an LLM to generate javascript code, inspired by the quote.
- **strtupify.io**: Developing an interactive simulation game utilizing Generative AI, enabling users to found and manage virtual startups. AI-driven characters collaboratively brainstorm product ideas, engage in dynamic conversations, and make strategic business decisions, simulating realistic entrepreneurial scenarios.
- **macros.chat**: Developed a web app enabling users to enter in a description of what they ate and have a LLM provide macronutrients based on the description.
- **fake-data.com**: Developed a web app leveraging LLMs to assign decimal scores (0-1) signifying the significance of various topics annually. Analyzed compiled data to identify potential trends between seemingly unrelated subjects.
- **Maslow Index**: Developing a tool leveraging LLMs to analyze the descriptions of companies listed on the stock market and designates which needs the company's product or service addresses, according to the Maslow Hierarchy of Needs, creating new indexes similar to the NASDAQ or the DOW.
- **Caster**: Developed an application enabling users to search for ensemble-cast TV shows and rank cast members based on preference. Examples include shows like "The Office" and "Game of Thrones".
- **No Spoilers**: Developed an application where a user can upload a novel and have a Generative AI model answer questions about the text, without spoiling anything from later chapters.
- **Kaggle-Package-Index**: Developed a tool that scrapes published notebooks on Kaggle to analyze and report the most frequently imported packages, offering insights into prevailing package usage trends within the Kaggle community.
- **Custom PC Build**: Successfully assembled a high-performance computer from individual components, optimizing for specific computational needs and ensuring compatibility and performance tuning.

RELEVANT RESEARCH

- **The ChatGPT Conundrum**: This paper explores the accuracy of AI detection tools in identifying human-written scientific abstracts as non-AI generated. Using over 14,000 abstracts from major journals, the study reveals that up to 8% of human-authored texts were mistakenly flagged as AI-generated. These findings highlight the limitations of current detection tools, their potential for false accusations in academic and professional settings, and the need for more reliable methods to discern AI-generated content in an evolving technological landscape.
- **Artificial intelligence and machine learning overview in pathology & laboratory medicine**: This comprehensive review introduces essential machine learning concepts and data preprocessing techniques tailored for pathology and laboratory medicine. It emphasizes the role of supervised learning, data standardization, and algorithm selection in analyzing complex medical datasets, such as images and numerical records. The article serves as a foundational guide for healthcare professionals, bridging knowledge gaps and highlighting the potential of AI to enhance diagnostic accuracy and operational efficiency in medical settings.
- **Assessing Real-World EMS Operations During a Pandemic**: This study examines the critical role of municipal 911 Emergency Medical Services (EMS) during the COVID-19 pandemic, focusing on patient transport and outcomes. By analyzing data from 18 emergency departments over the first 100 days of the pandemic, the research highlights that EMS transported the most critically ill patients, with higher ICU admission and mortality rates compared to those arriving by private means. The findings underscore EMS's indispensable role in public health emergencies and advocate for sustained funding, staffing, and strategic planning to optimize pandemic response capabilities.

EDUCATION

Cleveland State University *December 2020*
Master of Information Systems
Honors: *summa cum laude*

John Carroll University *December 2015*
Bachelor of Science in Business Administration
Dual Majors: Logistics and Marketing

EXTRACURRICULAR

- Meeting with my nephew on a weekly basis to teach him game development.
- Publishing blogs on a regular basis on personal portfolio website.
- Served as a board member for Hull House – Real Recovery, a non-profit organization that provides peer support services for anyone struggling with an eating disorder.
- Played piano since the age of six and attended the Cleveland Institute of Music – Young Composers Program in 2009.
- Four-year captain of John Carroll University rugby team.
- Served as an officer for Lyndhurst Toastmasters club in 2016.