David Thole

☐ 319-383-4891 • ✉ hire.me@thedarktrumpet.com • 🌐 thedarktrumpet.com

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✒ Professional Summary

A strong developer in many languages with a heavy background in Full Stack Development, Machine Learning, Artificial Intelligence, and Data Analysis. Adapts quickly to new environments, and finds interest in new techologies and trends. A seasoned IT professional with a wide range of interests and backgrouds.

🧭 Experience

> **University of Miami, Miller School of Medicine** — **Remote**

Senior Application Architect — *2022–Present*

- Developed multiple full-stack applications to meet gaps in SaaS software for business needs. This includes:
  - MSPE (Medical Student Performance Evaluation) application that facilitates the consumption of data from curriculum and learning management systems, student information systems, and other collection instruments complete with a workflow, PDF export capability, and administrative review.
  - Applicant Dashboard and Status application that allows for applicants to view their overall status of admission within the Miller School of Medicine.
- Leads and mentors a team of full-time employees and students implementing technological solutions for the college using Python.
- Developed multiple Large Langauge Models for facilitating the MSPE process, and administrative efficiencies using LangChain to interface with LLMs and tools.
- Regularly meets with both senior IT and senior school leadership on architectural and strategic roadmaps, regularly assists in evaluating software for technical feasibility.
- Developed our Datamart, a central storage location that consumes information from various on-prem and 3rd party provides, and publishes data endpoints for end-user consumption through either Excel or reporting solutions.

> **Duck Creek Technologies** — **Remote**

Software Architect, Data Architecture — *2022–2022*

- Was part of a central architecture team. This team was responsible to interfacing with individual development teams (e.g. PolicyCenter, ClaimsCenter) to ensure architectural best practices are met.
- Specialized in the area of Enterprise Data Governance and best practices.

> **United Fire Group Insurance** — **Cedar Rapids, IA/Remote**

Enterprise Data Architect — *2020–2022*

- Worked as part of the Datawarehouse team and was the main contact for GuideWire products (DataHub). Regularly met with ETL developers to define best practice, data dictionaries, and lineage.
- Worked in the Collibra platform, designing integrations between the systems from a metadata consumption point of view.
- Regularly met with upper leadership and business units on Enterprise Data Governance implementation, led the Data Governance initiative (data dictionaries, lineage), managed data security through usage mapping.

> **University of Iowa** — **Iowa City, IA/Remote**

Adjunct Lecturer — *2021–2023*

- Instructor for Data Analytics department (R, Python)
- Taught Graduate students how to use Python over a 9-week course in an online setting including assessing the student's aptitude. Topics for the course included basic Python, analysis using Pandas, NumPy, Plotly/Matplotlib, and some scikit-learn.

> **Kingfisher Technologies** — **Cedar Rapids, IA/Remote**

Solution Architect — *2019–2020*

- Developed in-house software (MVC/C#) and scripts (TSQL, PowerShell)
- Managed large-scale SQL Server systems (performance tuning, index optimization)
- Created maintenance scripts for table growth tracking

> **University of Iowa, College of Pharmacy** — **Iowa City, IA/Remote**

Senior Application Developer — *2013–2021*

- Developed full-stack applications to manage business needs including:
  - NewView (eSyllabus): A system that would allow for mapping of a curriculum, and syllabus generation including PDF export. This system was used by multiple institutions (C#).
  - Asset Management System: A system that was used to catalog IT equipment (C#).
- Managed four SQL Servers within Azure for various purpose including different institutions when appropriate, test and production environments.
- Migrated on-premise systems/services to Microsoft Azure including App Services and SQL.
- Developed a multitude of libraries, and smaller application in a wide range of systems. This includes various C# libraries, customizing Open Source libraries with our needs (including collaboration), Access, Excel and other solutions to meet business needs.
- Regularly engaged with end users for support and stakeholders for project work. Also mentored and led one employee during this time.

> **University of Iowa, College of BioChemistry** — **Iowa City, IA/Hybrid**

Senior Application Developer — *2019–2020*

- Worked in collaboration with three labs, acting as their sole IT support individual. Assisted in all IT needs for the labs.
- Acted as an interface between Central/Administrative IT and the labs to handle networking and computer needs.
- Developed multiple projects in the area of image analysis and SNP/mutation cluster tools.
- Acted as mentor for Python/Bash/Excel skills for lab members (graduate students), as well as assisting in the analysis of data for publication.

> **Center for Bioinformatics and Computational Biology** — **Iowa City, IA**

Application Developer — *2010–2013*

- Developed genomic data analysis tools (BWA, Bowtie, GATK)
- Optimized UNIX/Linux data manipulation pipelines

> **Research Information Systems** — **Iowa City, IA**

Application Developer — *2006–2010*

- Maintained largest in-house application (UIRIS, PHP)
- Led feature-set upgrades (2-8 months each)
- Managed teams (3 members) including hiring

> **Townnews.com** — **Moline, IL**

Application Developer — *2005–2006*

- Maintained Newsys CMS (PHP) and Autosys application
- One of two developers for largest in-house application

Education

The University of Iowa — **Iowa City, IA**
Master of Computer Science, Focus: Data Mining and Knowledge Discovery — *2012*

The University of Iowa — **Iowa City, IA**
Bachelor of Science, Computer Science — *2005*

Active Technical and Business Skills

Machine Learning & AI: **Proficient:** Pandas/Dask, Scikit-Learn, Axolotl/Unsloth, LangChain **Working:** Tensorflow, Hugging Face, Qdrant/Weaviate **Conceptual:** ML Concepts (Regression, Clustering, Forests, etc.), Text LLM Concepts (Fine-tuning, pretraining, tokenization, etc.), Integration Concepts (Agents, RAG, Functions, MCP, etc.)

AI Architecture: LocalAI (LLM hosting), OpenAI endpoints (STT, TTS, etc.); $30k+ local hardware investment for AI/ML development.

Programming Languages: Python (Active, daily professional use), Common Lisp (Active, maintenance), JavaScript/TypeScript (Active, web interfaces), Go (Active, performance-critical tasks)

Databases and Related: Microsoft SQL Server (2012-2019, Azure SQL), MongoDB

Cloud & Infrastructure: Azure (Azure SQL, CosmosDB, Logic Apps, Entra), Docker (Run, Create, Compose), VMWare/QEMU

Operating Systems: Linux (Arch, CentOS, Gentoo, QubesOS), MacOSX

♘ Project Management: Agile Methodology

❷ Concepts/Other: Version control with Git, Data Governance, ETL best practices, Microservices

♻ Inactive, but Experienced

❦ Programming Languages: AppleScript, Bash, C++, C#, Delphi, ELisp, F#, HTML/CSS, Java, JavaScript/TypeScript, Perl, PHP, PowerShell, Python, R, Ruby, Visual Basic

☷ Database: MySQL, PostgreSQL

🐧 Operating Systems: Windows Server, Unix (FreeBSD, OpenBSD)

🤝 Professional Activities

Presented at Iowa Code Camp (R, Python/Django, Common Lisp, Azure); Prior very active member of i380 (SQL Server), TechCorridor.io; prior leader of R Users Group at the University of Iowa, and Python Users Group at the University of Iowa

🍃 Hobbies and Interests

The majority of my time is spent with AI - this includes training models, integrating systems, MCP, and developing pipelines.

Other interests include writing, playing the piano, and reading.

🏅 Awards & Honors

Dean's List (multiple years), John Phillips Sousa Award