**Ryan McWhorter**

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**Education**

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| --- | --- | --- |
| **The University of Texas at Austin** | Bachelor of Business Administration, Quantitative Finance | May 2022 |
|  | Overall GPA: 3.0053  I have completed 105 credit hours, including 20 additional hours of upper division mathematics. |  |

**Projects and Research**

**Sigmoid Technologies** – *Co-founder;* Austin, TX  December 2019 – Present

*Pre-seed startup focusing on medical imaging*

* I partnered with my co-founder to design and build an app which allows on the fly diagnosis of chest x-rays.
* This included work with machine learning which entailed training convolutional neural networks as well as replicating established scientific work such as CheXNet.
* I also built a backend system on Firebase which includes the ability to authenticate users, upload images, and process image data (all done in Python).
* We also integrated and maintained a NoSQL database, allowing us to efficient serve both our iOS app and our automatic image processing services.
* We faced challenges including getting our ML models to run automatically in the cloud (via Google Cloud AI Platform and Google Cloud Function), and getting these models to run in a performant manner on constrained hardware.

**Differential Geometry and Portfolio Theory** February 2020 – Present

* This research is on going and as of yet unpublished.
* Alongside several professors, I have been investigating the application of differential geometry (and in particular, Riemannian geometry) to the study of financial risk
* This approach yielded a new way of thinking about risk measures and promises to yield interesting results concerning measurement of arbitrage opportunities.
* Any research program is at times fraught with challenges, and for me that has mostly been in digesting a wealth of literature across fields as far apart as statistical divergences and mathematical physics

**Leadership Experience and Activities**

**Texas USIT** –*General Member*  Fall 2018 – Fall 2020

* Voted on various positions to take with USIT capital, alongside other general members.
* Attended secondary analyst group meetings, centered on learning financial fundamentals, e.g. GAAP accounting and using DCFs to value investments
* Participated in annual Analyst Group Stock Pitch

**Technical Qualifications** \_\_\_\_\_\_\_\_\_

**Programming and Development:**

* Fluent in Python and Rust with a focus on performant data gathering and manipulation.
* I have varying degrees of exposure to R, MatLab, Bash, and SQL.
* I’ve developed applications on most operating systems, including Window, Linux (Ubuntu), and MacOS.
* I also have experience in machine learning, in particular in image classification.
* I am familiar with Git, having hosted many personal things on GitHub and Sigmoid Technologies’ codebase on GitLab

**Mathematics:**

* My mathematical education includes probability, linear algebra, vector calculus, differential equations, and real analysis. This includes ongoing education in complex analysis and algebraic structures.
* In addition to standard curricular courses, I have some degree of familiarity with differential geometry and multilinear algebra.

**Additional Information About Me**

**Computer Skills**

* I have extensive experience with Microsoft Word, Excel, and PowerPoint.

**Interests:**

* I read frequently, and I have a reading list that can be found at <rmcwhorter.github.io/reading.html>.
* Most of my reading relates to finance, economic history, military history, and philosophy and sociology

**Work Eligibility**

* Eligible to work in the U.S. with no restrictions