NIKHIL NARAYANAN

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EDUCATION

UNIVERSITY OF DELAWARE   **Newark, DE**
M.S. Applied Mathematics   September 2021 – May 2023

THE PENNSYLVANIA STATE UNIVERSITY   **State College, PA**
B.S. Chemical Engineering   September 2014 – May 2018

TECHNICAL SKILLS

- C# - .NET Core/.NET Framework
- TypeScript/JavaScript - React
- C/C++
- SQL - SQL Server/PostgreSQL
- ETL - SSIS/Azure DF
- Windows/Azure

PROFESSIONAL EXPERIENCE

DECISIVEDGE LLC   **Newark, DE**
Lead Developer (Primary Client: Large National Student Lender)   September 2018 – Present

- Responsible for leading a multidisciplinary team of web developers, ETL and database developers, business analysts, and support professionals, driving continuous improvement while maintaining operational efficiency and stability.
- Lead the ongoing development and support of the certification and disbursement system which processes origination files, coordinates certifications, adjustments, cancellations, disbursements, and refunds via the CommonLine system, a web portal, and a fax service. During peak season, this system robustly disburses over $150 million per day between a handful of banks and thousands of schools and branches.
- Designed, developed, and continuously maintain a collection of REST APIs that act as a gateway between a mobile application and the originations and servicing systems. These endpoints enable users to apply for loans, track disbursements, manage account information, and make payments.
- Designed, developed, and continuously maintain an OpenID Connect compliant single sign-on (SSO) system that consolidates identity systems from across multiple vendors into a unified platform. This system manages sessions, credentials, and permissions across several external and internal facing applications collectively serving over 1 million users.

PERSONAL PROJECTS

Nik's ML Library (NML)   **Github**
Developer and Maintainer   March 2024 – Present

- Developed a high-performance, header-only C++ library designed to provide lightweight and easily integrable implementations of common data science and machine learning primitives and algorithms, entirely independent of external dependencies, including the Standard Template Library (STL).
- Algorithm implementations include Principal Component Analysis, Approximate Nearest Neighbors, Eigen Solvers, Pairwise Controlled Manifold Approximation (PACMAP), Linear Regression, and Logistic Regression.
- Data transformation and data structure implementations include an in memory DataFrame, CSV Parser, Regular Expressions, Heap, MinMaxHeap, HashSet/Map (2x faster than the STL for collections < 1M), and RedBlackTree.

Market Visualizer   **MarketVisualizer.com**
Developer and Maintainer   May 2023 – Present

- Developed a set based financial statement query language called Market Query Language (MQL) with a type system homomorphic to the financial markets. The Market Visualizer MQL Query Editor was built with no libraries and includes syntax highlighting, IntelliSense, autocomplete, and user generated macros.
- Created a series of dashboards to allow users to explore the query results to find equities of interest.
- Built an ETL system to maintain a data warehouse of historical currency exchange rates, commodity prices, global equity prices, and financial statements.