

Mathew Joseph

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<https://mathewjoseph31.github.io/project-portfolio/>

Schedule Meeting @: <https://scuoler.com/scheduler/mathew>

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Summary

- Over 12 years of experience in **Programming** - Javascript, Restful Web API, GraphQL, XML, HTML, CSS, JSON, XML, SAX, DOM, .NET Framework (C#, VB, ASP.net, Razor, Linq, Entity Framework, Nunit), .Net Core, Java/JEE (Servlets, Struts, JDBC, Junit), Apache Solr, Object Oriented Design, Modeling, Python Programming (Pandas, Numpy, Scipy, Scikit Learn, Jupyter), Perl, C, C++.
- Over 6 years of experience in **Full Stack Web Development** - Javascript, Typescript, HTML, CSS, DOM, React JS, Angular JS, Bootstrap, JSX, AJAX, Node JS, EJS, Express JS, MERN Stack, JQuery, Webpack bundler.
- Over 6 years of experience in **Data Engineering** - SQL, MS SQL Server, Oracle PL/SQL, Snowflake, PostgreSQL, MySql, MongoDB, Mongoose client, Datawarehousing, Sql Server Integration Services(SSIS), Sql Server Reporting Services (SSRS), Talend ETL, Matillion ETL
- Experience in **Cloud development** - Amazon AWS Cloud (S3, Lambda, SNS, CloudWatch, AWS Batch, SQS, EC2, ECS, Sagemaker) , Google Cloud (Cloud Functions, Cloud Run services, VMs, BigQuery), Azure Cloud, Oracle Cloud, CI/CD and DevOps practices
- Experience in all phases of software development life cycle (SDLC) - Agile Scrum methodologies, Waterfall, Object Oriented Methodology.
- Experience in **Source Code Editors IDEs** - Visual Studio Code, Eclipse, MS Visual Studio IDE.
- Experience in **Version Control Systems** - GIT (Github, Gitlab), MS Team Foundation Server, Source Safe, and Subversion (SVN).
- **US Citizen** - Unrestricted authorization to work in US.

Professional Experience

Scuoler LMS for Schools/Universities

Links: <https://scuoler.com>, <https://github.com/scuoler>, <https://github.com/MathewJoseph31/scuoler>.

Duration: Mar 2022 - Oct 2025, (~3 Years)

Roles held: Senior Software Engineer, CoFounder

Organization: Scuoler¹, 6510, High Meadow CT, Long Grove, IL, USA

Technologies: .NET Core 8 (C#, ASP.NET MVC, LINQ, Nunit), HTML, CSS, Javascript, Typescript, React, React Native, Node JS, Express, Rest APIs, PostgreSQL, MongoDB, Sockets.IO, Web Sockets, Web RTC, Fontawesome, Material UI, Github (CI/CD), AWS (Lambda, SQS, SNS, CloudWatch, API Gateway, EC2, SNS)

Projects Description: Scuoler is a content management system (CMS) for education.

- Market validation by comparing with existing tools such as Moodle, Blackboard, Canvas, Mediawiki, Wordpress, Sitecore etc. and cross-feature implementation from the above platforms.
- Implemented game based techniques with realtime video calling, screensharing features to better engagement and collaboration of learners and educators. Feature for automatically grading student tests and quizzes.

¹yet to be registered. Took a break of 7 months while I worked on a short-term project with Peaklogix

- Implemented textual indexing, dynamic search feature was implemented using Generalized Inverted Index (GIN), Stemming supported in PostgreSQL.
- Chat feature implemented using Sockets.IO, Web RTC libraries.
- Implemented frontend in Html, CSS, React, Redux, Backend using Node, Express JS, Security using Json Web tokens (JWT), bcrypt, crypto-js, Morgan logging library.
- Hired/managed couple of developers for the project.
- Implemented OAuth 2.0 login for Facebook, Google, and Microsoft.
- platform hosted live on AWS, native app (Android/IOS) using react native.

Warehouse Management Software for Automated Inventory Storage and Retrieval

Link: <https://www.peaklogix.com/>.

Duration: Feb 2023 - Aug 2023, (6 Months)

Roles held: Senior Software Engineer

Organization: Alta Equipment Corporation, Syracuse, NY, USA

Technologies: .NET, ASP.NET, SQL Server 2019, HTML, CSS, Javascript, JQuery, Bootstrap, Angular JS, Oracle Virtual Box, Azure Devops

Projects Description:

- Contributed to existing applications/projects such as BulkPro Web App, PickPro Web App, and Pickface Native App.
- Developed backend Logic in C#.NET for Empty locations recommender for putaway, Admin menu for inventory moves, web UI Screens using JQuery UI/Bootstrap and Angular JS.

Edx Bootcamps (2U Inc.)

Link: <https://2u.com>, <https://edx.org>.

Duration: Sep 2022 - Apr 2023 (7 Months)

Roles held: Software Instructor (Evening/Part-time)

Organization: 2U Inc., 7900 Harkins Road, Lanham, MD, USA

Technologies: HTML, CSS, Javascript, Typescript, Web APIs, Bootstrap, JQuery, React, VS Code, Canvas CMS

Role Description: Instructing courses for part-time/evening classes for the full-stack flex program.

Business Intelligence Cloud platform

Link: <https://www.raymourflanigan.com>.

Duration: Oct/2017 – March/2022 (4.5+ years)

Roles held: Web Technologist, Application Developer, Lead Data Engineer

Organization: Raymour and Flanigan Inc., IT Department, Morgan Rd, Liverpool, NY, USA

Technologies: .NET Framework (C#, VB, ASP.NET, Razor, LINQ, ADO, Entity Framework, Nunit) and .NET Core, HTML, CSS, Javascript, Typescript, React, Node, Webpack, Snowflake Cloud Datawarehouse, MS SQL Server 2017, Transact SQL, Oracle 8i/10g, Toad for Oracle, SQL Server Integration Services, Oracle PL/SQL, Datawarehousing, Adobe Experience Manager, Salesforce, AWS (Lambda, SQS, SNS, CloudWatch, API Gateway, EC2, SNS, Sagemaker), Python stack, Perl, Docker containers, Python Programming (Pandas, Numpy, Scipy, Scikit Learn, Jupyter)

Projects Description:

- Founding member, designed/implemented a cloud based Business Intelligence (BI) Web App on top of a cloud based data warehouse in Snowflake using star schema architecture for efficient data analytics and visualization.
- Extending and modifying the existing MS Transact SQL functions, packages, jobs, Oracle PL/SQL ERP system called GERS, writing PL/SQL procedures.
- Writing regexp based pattern matching algorithms in TSQL/PLSQL/Perl for syntactic approximate keyword based searching. Building lambda functions using .NET Core/Python on AWS Cloud platform using Lambda, API Gateway, SQS, SNS, S3.
- Creating ASP.NET MVC apps and web apps (HTML, CSS, Javascript, React JS, JSX, Bootstrap UI, JQuery, Webpack bundler, Node JS) to interact/update data in the datawarehouse

in order to mitigate manual processes. Designed and implemented several UI Screens for maintaining the data models in the datawarehouse.

- Building Rest API and webhook integrations with Adobe Experience Manager and Salesforce CRM.

XData

Link: <https://www.cse.iitb.ac.in/infolab/xdata/>.

Duration: Sep/2015 – Apr/2017 (1.7+ years)

Roles held: Post Doctoral Fellow

Organization: Indian Institute of Technology (IIT) Bombay, Mumbai, India

Technologies: Java, JSP, JQuery, Html, CSS, Moodle/Canvas CMS, SQL, JSQl parser, Dhtml - Xchart/tree JS library, PostgreSQL, Subversion, Git - Github, Gitlab

Project Description:

- Contributed in building an SQL query grading tool for verifying student/programmer written SQL queries against a SQL query provided by Instructor/Tester, which is assumed to be correct.
- Implemented information retrieval techniques such as edit distance similarity to find semantic similarity of SQL queries.
- Reimplemented the query processing module, extending the JSQl parser to support queries having nested with clauses, natural outer joins, array overlap/containment operators. Extended query (pre)processing module by removing redundant tables in SQL queries, (outer) joins, nonrecursive With clause elimination, conversion of selection/having clause predicates to a standard form where strictly less, greater than operators are converted to $\leq$, $\geq$ operators by changing the values of the associated operands depending on the precision of the corresponding attributes, support the ORDER BY clauses and the distinction of subqueries that have ALL/ANY quantification.
- Extended the Moodle CMS with the implemented webapp and as addon.

Contextualized Knowledge Repository

Link: <https://www.fbk.eu/en/>.

Duration: Sep 2008 – April/2015 (6.5+ years)

Roles held: Project Fellow, PhD Research Fellow

Organization: Fondazione Bruno Kessler-IRST, Trento, Italy, DISI, University of Trento, Italy

Technologies: .NET Framework (C#, ASP, WPF), Apache Solr, Subversion, Sesame rdf4J graph database(DB) library, Owlim graph DB library, JAWS Wordnet API, Mediawiki CMS, DOM/SAX XML Parsers, OWL/RDF/SPARQL.

Project Description:

- Extending Mediawiki CMS tool for support of contextual knowledge, and techniques for representing *context* in graph shaped data formats such as RDF/OWL/XML.
- Developed the core API and UI interfaces using Html, Javascript, ASP.Net, Windows Presentation Framework (WPF), Apache Solr and visualizing the stored data using charting, visualization API (DHtml) for analysis.
- Implemented the module that indexes RDF files onto an Apache Solr server, which is then used for keyword search.
- Implemented algorithms for extracting knowledge from semistructured XML files to form Solr documents that are added to the Solr Server. Indexed document server can be keyword searched leveraging the advanced search features of Solr that includes stemming using porter's algorithm, removal of delimiters, stopwords, duplicates, case conversion, whitespace removal. Keyword expansion was enabled using expanding the search keywords using synonyms, hypernyms, and hyponyms from the wordnet dictionary.
- Experimentation with large datasets, tabulation, documenting, visualization of obtained results.

EDUCATION

2009/Nov - 2015/Apr	PhD in Information Technology, DISI, University of Trento, Italy, funded by Fondazione Bruno Kessler IRST, Research Center, Trento, Italy.
2006/Sep - 2008/Jul	Master of Technology in Cyber Security (with Highest Honors), Amrita University, Coimbatore, India. C.G.P.A 9.09/10. Funded By GATE fellowship
1999/Sep - 2004/May	Bachelor of Technology in Information Science Visvesvaraya Technology University Belgaum, Karnataka, India C.G.P.A 6.24/10

Published Articles

<https://www.cse.iitb.ac.in/~mathewj/>