HARICHARAN PULUGURTA

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Summary

- Extensive AWS Cloud experience (IAAS,PAAS), Re-Architect and migrate legacy systems to AWS Implement Serverless architecture using Containers, AWS ECS, Lambda/Step functions, DevOps automation using AWS SDK. IOT development experience using IBM OpenWhisk and Raspberry pi. Experience in application development using Azure Web Apps and Functions.
- Software development using .NET, .NET Core, JavaScript, NodeJs, Go, HTML5, CSS, SQL/NoSQL Databases.
- Expertise in developing Geographical Information Systems Applications (GIS) using ArcGIS Server Suite, ArcObjects, MapObjects, ArcGIS API for Silverlight, Spatial SQL Server 2008.
- Database programming using Mongo Shell, SQL, T-SQL, Stored Procedures.
- MongoDB for DBA's Certificate.
- SAS Certified Base Programmer.
- Publications and conference proceedings in various journals.

Summary of Skills

Programming and Development Tools: .NET/.NET Core, JavaScript, Python, Pandas, Go, Docker, SQL/TSQL, XAML, HTML, CSS, VBA, MongoDB, SQL Server, SQL Server Reporting Services, Mongo C# Driver, nHibernate, Entity Framework, Windows Workflow Foundation, WCF, WCF RIA Services, LinqToSQL, Domain Services, ADO.NET, ADO, DAO, Lucene.net, Knockout, CoffeeScript, DevExpress, Telerik, SonyVegas, Couchbase, Visual Studio 2012/2010/2008/6, Git, SVN, nHibernate Profiler, SQL Profiler, dotTrace, Luke, WebStorm, MongoVUE, Robomongo, LinqPad, NewRelic, Resharper, Raspberry Pi

Cloud *AWS* – CloudFormation, SES, SNS, S3, AWS Powershell CLI, DynamoDB Streams, Elastic Container Service, Lambda/Step Functions, Glue, CloudWatch, API Gateway, Powershell CLI, RDS, Transcribe

Azure – App Service, Functions, Web Apps, VSTS

IBM – OpenWhisk/Cloud Functions, MQTT and IOT

GIS: ArcGIS Server 10, ArcGIS Desktop 10, ArcSDE 10, WebADF, ArcObjects, Python Scripting for ArcGIS, MapObjects, ARCGIS API for Silverlight, Bing Maps

Database: MongoDB, SQL Server 2017, DynamoDB, PostgreSQL

Statistics: SAS, R, SPSS, MINITAB, MATLAB

Platforms: Windows, Linux

Experience

10/2011 - Current
Brooklyn, NY

Senior Software Developer/DevOps
THE NEW TEACHER PROJECT

Design/Architect and develop systems using latest technologies or services (AWS/Azure) in an Agile environment. Work on complex features (larger stories) and provide support for team members. Follow coding standards and best practices. Automate AWS infrastructure (developer, QA/Staging and production environments) using Docker, Lambda, CloudFormation and PowerShell.

Development

- Design and develop Applicant Tracking System TeacherTrack2 using .NET Framework deployed on AWS. The system is used by new/veteran teachers applying for new positions and by district staff for recruitment and by principals/coaches/evaluators for teacher evaluation.
- Design and develop teacher observation tool Argus using JavaScript and Node.js and deployed on AWS. The system is used by coaches and evaluators for teacher evaluation.
- Design and develop web based reporting system INRS using .NET Framework deployed on AWS. The system is used by district staff, principals to generate reports based on district/school/teacher level performance data.
- Web development using HTML, CSS, JavaScript (ES6) frameworks such as Angular, Knockout and ASP.NET (Webforms/MVC).
- Backend development using languages C#, Node.js, Python and Go with databases SQL Server, MongoDB, PostgreSQL, DynamoDB and AWS RDS.
- Implement Serverless architecture by converting monolith services written in WCF to AWS microservices using Lambda/Step functions, S3, SES, DynamoDB Streams. Lambda/Step functions are created using .NET Core, Python and Go.
- Data analysis using Python (Pandas library).
- Design and develop microservices for Salesforce and Blackboard integration using AWS Lambda functions (.NET Core).
- Developed custom Salesforce API endpoints using APEX Classes, Triggers, Salesforce BulkAPI.
- ETL using AWS Glue, AWS Lambda (Python), Salesforce REST API.
- Created a CI/CD pipeline using AWS CloudFormation, Lambda, S3 and PowerShell scripting.
- Test-driven development using MbUnit, Galelio, Selenium, qUnit and Jasmine.
- Database programming using SQL Server, nHibernate, Entity Framework, Stored Procedures, Views.
- Use of Lucene.net for indexing data and Couchbase server for caching.
- Extensive use of performance tools such as nHibernate profiler, SQL profiler, dotTrace, NewRelic for improving performance of website in terms of faster load times.

Operations

- Helped in setting up beta and production environments.
- Provide 24x7 production support which includes addressing infrastructure as well as application alerts.
- Automate AWS infrastructure for CI-CD pipeline.
- Extensive use of AWS Powershell CLI for data backups, moving data between different instances and copying data from production instances to staging and dev instances.
- Setup monitoring, logging using CloudWatch
- Deployed a 3-member MongoDB replica set.
- Data center migration – Cologaurd to AWS
- Data center migration – Rackspace to Cologaurd
- Setup Monitoring using Alchemy Eye.

04/2011 - 10/2011
Brooklyn, NY

Software Developer
WINDANALYTICS.COM

WindAnalytics.com

- Designed a web application using n-Tier architecture for wind turbine installer/property owner to analyze whether a property is cost effective for wind turbine installation using ASP.NET MVC3, **C# 4.0**, **WCF, Silverlight 4.0**, SQL Server 2008, ArcGIS Server 10.0 and ESRI Silverlight API.
- Developed **authentication** module using **ASP.NET MVC3** with features such as CAPTCHA.
- Integrated with **Zoho CRM** (Zoho API) for forwarding the customer details to the CRM database.
- Integrated with **PayPal** for payment processing.
- Created ArcGIS cached service to create a wind class map for USA using NREL data that shows the average wind pattern. Created geoprocessing services to determine the wind class for missing areas based on nearest spatial search using Python.
- Extensive use of **Linq**, **LinqToSQL**, Entity framework and stored procedures for **SQL Server** CRUD operations and use of **Domain Services** consumed by the Silverlight.
- Coding standards and practices based on **MVVM** (Silverlight), MVC3, CodeRush Xpress and **unit testing**.

Meteorological Data Checker/Met Station Checker

- Developed a web application using n-Tier architecture for wind analyst to process met station data for wind analysis. The application was developed using **ASP.NET MVC3, C#4, WCF RIA, Silverlight 4**, SQL Server 2008, ArcGIS Server 10.0 and ESRI Silverlight API.
- Created an **ArcGIS dynamic service** using **ArcGIS Server** that returns data (over 20,000 met stations) from SQL Server as dynamic tiles/images that change as the data changes.
- The application allows an analyst to select an area of interest on the map to retrieve all the met stations in the area (using WCF RIA, Domain Services, LinqToSql and SQL stored procedure). The analyst selects a station to further process the data.
- Extensive use of Linq, LinqToSQL and Entity framework for **SQL Server** CRUD operations.
- Coding standards and practices **MVVM** (Silverlight), MVC3 (ASP.NET), StyleCop and **unit testing**.

07/2010 to 04/2011
Burlington, MA

Software Developer
FOLIAGE SOFTWARE SYSTEMS

September 2010 – April 2010 – VOLPE, Boston, MA

- Developed a web application for FAA/NPS personnel to download/view/add/modify GIS data using ASP.NET 4.0, **C# 4.0**, **Silverlight 4.0**, **SQL Server 2008**, **ArcGIS Server 10.0**, ArcSDE, ArcGIS API for Silverlight in an AGILE software development process.
- Silverlight **Telerik** Rad Controls for displaying data (tabular and graphical).
- Created Web Services to automatically download GIS data (USGS Seamless server) on the server and import it to the ArcSDE database.
- Created REST based geoprocessing services using ArcGIS Server, Python and **ArcObjects** to send large amounts of GIS data as images.
- Extended the ArcGIS API for Silverlight for building complex user specific GIS tools that utilized the geoprocessing services/third party web services to analyze the GIS data.
- Coding standards and practices based on **MVVM pattern**, styling using StyleCop and unit testing using MSTest.

July 2010 – September 2010 - VOLPE, Boston, MA

- Developed a prototype web based geographical information system for FAA using **ASP.NET, C#, ArcGIS Server 9.3**, ArcSDE 9.3, ArcGIS **WebADF** in an AGILE process.
- The web based GIS application had features such as connecting to ArcSDE, editing features (adding, deleting and changing geometry).
- Developed custom GIS web controls that extended WebADF controls using C#.
- Conversion of WEB ADF based application to **Silverlight** version.

12/2007 to 07/2010
Chicago, IL

Software Developer
INFRASTRUCTURE MANAGEMENT SERVICES, INC

- Developed a data collection application using **C#, DevExpress, SQL Server** that interfaced deflection measurement instrument with a GPS instrument using serial port communication.
- Developed a web-based PMIS that integrated pavement condition data (Data, Images and Videos) with GIS maps using **.NET Framework**, Bing Maps and SQL Server.
- Developed an online data collection/validation Silverlight application for field crew/office personnel. Field crews upload data online as data are collected which is then evaluated by office personnel.
- Developed various kinds of 3D data visualization techniques using ArcGIS, KML/Google Earth, **Silverlight 3**, Bing Maps and field surveying data.
- Developed a QA software analysis tool using **C# Winforms**, **WPF** and SQL Server to QA the data. The statistical models in the system help to identify and correct the data quality issues.
- Developed a low cost system to tie-in the field data to its geographic location by creating a software application using **C#** that interfaced with GPS instrument and road data collection equipment.
- Developed a new image capture software using **C#,** Sony Vegas to enable capturing of hi-definition images of pavements from video tapes for integration with pavement network data.
- Introduced concept of using open source alternatives such as Google Earth for cost-constrained clients to

display pavement data and integrate with existing pavement management systems.

- Involved in creating project documentation in **SDLC** phase using MS Project, IBM Rational.
- Responsible for maintaining/upgrading existing IMS pavement management software called PavePRO developed in **Visual FoxPro**.

08/2002 to 12/2007
Toledo, OH

Doctoral Research Assistant
UNIVERSITY OF TOLEDO

- Performed extensive research, development and analysis of pavement management information system (PMIS) for the Ohio Department of Transportation (ODOT). Liaised closely with ODOT Office of Pavement Engineering in gathering user requirements and delivering project updates.
- Developed Pavement Management Information System (PMIS) for **ODOT**. PMIS is a data input, analysis and reporting software in **VB6**, **MS Access**, **DAO**, **ArcGIS** and **MapObjects**.
- Spearheaded development and implementation of Aggregate Geographical Information System (AGIS) for **ODOT** using **C#**, **ArcGIS, ArcObjects** and Access for use in performing analysis of spatial statistics culled from pavement aggregate data.
- Skillfully analyzed and programmed into PMIS statistical models such as regression, Markov, Kaplan-Meier, Weibull and linear mixed effects.
- Utilized data mining algorithms such as cluster analysis, decision trees and fuzzy logic using **C#** and **Java** to identify existing patterns in ODOT data.

Education

Ph.D., Engineering **2007**
UNIVERSITY OF TOLEDO — Toledo, Ohio

Master's degree, Transportation Engineering **2002**
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY — Hyderabad, India