

## Parth Patel | Senior Software Engineer, Astrapé Consulting, LLC

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**Mr. Parth Patel is a senior software engineer at Astrapé Consulting.** He is responsible for maintaining and enhancing the Strategic Energy Risk Valuation Model (SERVM), Risk Based Planning Scenario Builder (RBPSB), and SERVM Instance Manager (SIM). While at Astrapé Consulting, Parth has enhanced SERVM based on requirements from large utilities and organizations across the U.S. including the Southern Company, TVA, EISPC, CPUC, ERCOT, and PG&E. Parth designed, implemented, and maintains the RBPSB tool based on requirements from EPRI.

### Education

M.S. Electrical Engineering, University of Alabama at Birmingham

B.S. Electrical Engineering, University of Alabama at Birmingham – Summa Cum Laude

FE - Alabama, October 2012 (*EIT*)

### Experience

Designing and Implementing Modules related to Electrical Systems

Real-time Programming

Artificial Intelligence Algorithms

Software Design

Senior Software Engineer, Astrapé Consulting, LLC

### Major Clients

Southern Company

EISPC

CPUC

ERCOT

Tennessee Valley Authority

Pacific Gas & Electric

EPRI

### Technical Experience

**Languages:** T-SQL (prior experience), Objective C (prior experience), C (proficient), C# (proficient), Java (prior experience), Python (prior experience), VBA (prior experience), MATLAB (prior experience), SQLite

**Business Tools:** SQL Server 2000,2005,2008,2012, 2014 SQL Server Management Studio, Visual Studio, XCode, NetBeans, Eclipse, Matlab, LTSpice, Cadence, Android Studio,

## Relevant Experience

### ➤ **SERVM**

Mr. Patel has enhanced SERVM based on requirements from large utilities and organizations across the U.S. SERVM is used primarily for reliability risk analysis and provides key insights into the value and need of capacity in both the short term and long term.

Key Achievements:

- Updated and created core SERVM Modules with C#.NET Framework. Modules include Unit Modeling, Power Flow, Transmission Components, Reserve Sharing Group, Aggregated Area, Fuel Sources, LDC, Uncertainty, Ancillary Services, Reporting, and more.
- Designed and Implemented Reliability (LOLE, EUE, LOLH) Monthly/Annual Optimization Solver.
- Implemented Conversion Identifier, which identifies statistical convergence, to reduce study simulation runtime.
- Updated algorithms to reduce simulation runtime.
- Redesigned the Reporting Architecture.
- Modified SERVM to reduce RAM usage during simulation.
- Added User Permissions

### ➤ **Risk Based Planning Scenario Builder**

Mr. Patel has designed, implemented, and maintained the Risk Based Planning Scenario Builder (RBPSB) Software by EPRI. RBPSB allows users to study the impact of uncertainties on transmission based on the following factors: load variation related to weather and economic uncertainty, renewable generation variability, hydro variability, variations in demand response penetration, and historical variability in performance of generating units and transmission components.

Key Achievements:

- Designed and maintained RBPSB using C#.NET Framework.
- Performed system, performance, regression, and data interface testing.
- Modified RBPSB to use SQLite database

### ➤ **SERVM Instance Manager**

Mr. Patel has designed, implemented, and maintained SERVM Instance Manager (SIM) Software. SIM allows users to manage SERVM instances on remote servers. SIM also allows users to manage multiple SERVM simulations on different database simultaneously.

Key Achievements:

- Designed and Maintained RBPSB using C#.NET Framework.

### ➤ **Database Administrator**

Mr. Patel maintains database responsibilities for SERVM, RBPSB, and SIM software. Enhanced database performance, performed restores, implemented recovery procedures, handled performance tuning and conducted regular system backups. Ensured technical and functional designs meet business requirements.

### ➤ **Quality Assurance Specialist**

Mr. Patel maintains quality assurance responsibilities for SERVM, RBPSB, and SIM software. Performed system, performance, regression, and data interface testing. Ensured technical and functional designs meet business requirements.