

# Joseph E. Sutton

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## Projects & Experience

### Sr. Director of Engineering - ReUp Education

2022 - Present

- Using: NextJS, NestJS, TypeScript, NodeJS, Python, Docker, AWS, Postgres (RDS Aurora Serverless), Serverless (Lambda), OpenSearch, API Gateway, EC2, DynamoDB, TransferFamily, CloudFormation, CloudFront, S3, ECS, ECR, SQS, SNS, Jest, Electron, Salesforce, Tableau, Hubspot
- Created entire engineering department from scratch; Technology roadmap for multiple products, hiring process, department budget, standardized engineering rubric, monthly and quarterly reports, and department OKRs. Added modern development processes, tooling, testing, CI/CD, IaC, industry wide best practices and security forward mindset. Created and cultivated a department culture of innovation, learning and quality. Organized quarterly Lunch and Learn sessions. As well as providing mentoring, and performance reviews.
- Created and lead teams to implement transition plan for several legacy monolith products to a modern scalable architecture. Streamlined process bottlenecks, added automation, improved teams and service performance while reducing costs.
- Documented new and legacy system architecture, data models, products and processes.
- Conducted 60+ interviews for all levels of engineering and management roles. Hiring 15+ engineers and several managers, increasing the team size to 5x in 6 months.
- Launch a new product to several new marketplaces, implement long outstanding company initiatives, new features, improvements to existing products and create several new external facing client APIs.

### CTO (Co-Founder) - Stealth Social Startup

2020 - 2022

- Using: React, NextJS, ReactNative, NodeJS, NestJS, Firebase (Authentication, Firestore, Storage, Hosting, Messaging, Dynamic Links, Crashlytics, Testing), MapBox, Google Maps API, Elasticsearch, Serverless (Lambda), AWS, GCloud, Google Analytics, Listmonk
- Architected & built mobile app (iOS and Android) published on Apple & Google Play store.
- Created custom marketing site and setup mailing list manager to reduce costs.
- Architected & built administration site to manage user content, data access, multi environment deployment and releases.

### Technical Consultant - Self

2018 - 2023

- Using: React, NestJS, PostgreSQL, AWS Aurora Serverless (RDS), Serverless (Lambda), Artillery
- Architected & Built web app and admin dashboard.
- Designed and Conducted 10+ interviews for VP of Engineering position, and 30+ interviews for Fullstack engineer positions at all levels.
- Created a technical plan (architecture...), budget and timeline for a new SAAS product.
- **Pathstream.com**
  - Using: React, Electron, NodeJS, Docker, Microservices, Serverless, RDS PostgreSQL, Jest
  - Added and fixed feature in existing production web app. Documented data models and schemes of the backend.
  - Rebuilt deployment orchestration system (VMs in the cloud), architected/built Electron app, created Chrome extension/plugin, and developer/testing tooling.

### CTO (Co-Founder) - Stealth Audio Startup

2018 - 2018

- Using: ES6, Vue, NodeJS, AWS, Microservices, Docker
- Created consumer facing web and mobile app.
- Created administration site with approval workflow.

### Sr. Technical Leader/Architect - Cisco

2014 - 2018

#### • Immersive Innovation Projects

- Using: ES5/6, Vue 2, AngularJS 1.x, React, Polymer, Web Components, D3, Three.js, OpenCV, Unity, NodeJS, Hyper.io (Microservices), Kubernetes, AR/VR, RESTful APIs
- Technical leader, manager, mentor, architect, resource/project planning and created development methodologies.
- Designed and conducted over 200+ interviews for Fullstack engineer positions.

- Released over twenty projects with a wide range of technology, marketplaces, and ranging from long (1.5 years) to short (2-3 months) term.
- **Core Project Tools and UI libraries - Beta v1.0**
  - Using: ES6, NodeJS, NPM, Beelzebub, Gulp, Babel, JenkinsCI, Jira, Node-Webkit, Electron, AWS, Docker, Protractor/Karma/Testem, Ava, Supertest, Mocha, Chai, ESLint, JsDoc, Swagger UI, Browserify, Webpack, Bower, Yeoman, Yanpm, RxJS
  - Scalable, modular, plugin based CLI tool and UI libraries to accelerate projects development.
- **DT CloudVPN Portal - Release v1.3**
  - Using: AngularJS 1.3, RESTful APIs, JSON, NodeJS, Protractor

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## Principal Platform Engineer - GlassLab

2013 - 2014

- **Game Services Platform - Release v2.0**
  - Using: NodeJS, RESTful APIs, JSON, Redis, Couchbase, MySQL, Express, PassportJS, Mocha, AWS
  - Lead architect and lead engineer.
  - Scalable service based architect.
- **http://Playfully.org - Release v1.0**
  - Using: AngularJS, LessJS, HTML5, CSS3, Bootstrap, JQuery, Grunt, Bower, Karma
  - Lead architect and lead engineer.
- **http://ArgubotAcademy.org - Release v1.0**
  - Using: AngularJS, LessJS, HTML5, CSS3, Bootstrap, Grunt, Mocha
  - Lead architect and lead engineer.

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## Game Service Engineer - Electronic Arts

2011 - 2013

- **Scalable Structured Data Solutions**
  - Using:
    - MapReduce: Hive, Pig, Riak (Javascript).
    - Reviewed technology, created basic cluster, tested performance, stability and map reduction.
- **Monitoring Tool - Release 1.0**
  - Using:
    - Lead Developer
    - Server setup, pack and deploy scripts.
    - Developed API, backend PHP scripts, client side Javascript and some HTML/CSS.
- **Xfinity Games - Beta v1.0**
  - Using: Video Streaming, NodeJS, HTML5, iOS, PhantomJS, MySQL5, Riak, AWS
  - Lead Architect, Technical Director, and Server Engineer.
  - Defined & Documented API's, network architect and created code samples for developers to use the backend services.
  - Developed all backend services and deployment system.
  - Developed monitoring, command & control system with frontend.
- **R & D HTML5 Game (Strike Fortress) - Beta 1.0**
  - Using: NodeJS, HTML5, JSON, Javascript
  - Client and server side framework for multi-browser using WebSockets.
  - Command and control system to monitor, manage and configure servers in real time.
  - Documented development process and Network system.

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## Research

### Research Assistant - ISI-USC

3/2010 - 7/2011

Marina del Rey, Ca

- **Intelligent Agents for Large Scale Security Simulation - Release 1.0**
  - Assisted with development of the National Cyber Range, part of DARPA's contribution to the Comprehensive National Cyber Initiative.
  - System APIs for Agents.
  - Virtual communication and workplace tools (online websheet, phone, email, webpage).
  - Command and control system to manage Agents and services.
  - Integrated source from vendor.

- Nightly builds, server unit tests, end to end system tests.
- Maintained documentation.

## Research Assistant - CSUB Research

1/2007 - 9/2009

Bakersfield, Ca

- Chemical Plume Tracing System
  - Converted simulation system from Win32 2D to OpenGL 3D.
  - Supports multi-platforms (OS X and Windows tested).
  - Redesigned application to be dynamic and scalable.
  - Allow for multiple plume, vehicle, and different exec modes (sim or controller).
- Digital Video Watermarking and Attacks
  - Lead Developer.
  - Batch processes PNG images, converts discrete pixel values to continuous coefficient values (DCT using FFT).
  - Converts continuous coefficient values to discrete pixel values (CDT using FFT), writes PNG image.
  - Adds watermarks to a series of images using various methods (Gaussian, Uniform, or Orthogonal normal).
  - Attacks watermarks in a series of images using various methods (Bootstrap, Time-Series Intra-Video Collusion).
  - Calculates the similarity values of the watermark and attacked images.
  - Automated multimodal image output for visualization.

## Publications ISI-USC

- **Testing Cyber Security with Simulated Humans that Plan**
  - J. Blythe, A. Botello, J. Sutton, D. Mazzoccoand, J. Lin, M. Spraragen, M. Zyda, 23rd Innovative Applications of Artificial Intelligence, (IAAI '11)

## CSUB Research

- **A Time-Series Intra-Video Collusion Attack on Frame-by-Frame Video Watermarking**
  - S. Behseta, C. Lam, J. Sutton, R.L. Webb, 7th International Workshop, (IWDW '08), LNCS 5450, pp. 31-44, 2008.
- **Development of CPT M3D for Multiple Chemical Plume Tracing and Source Identification**
  - J. Sutton and W. Li, Proc of the 2008 IEEE International Conference on Machine Learning and Applications (ICMLA'08), pp. 470-475, 2008.
- **Integration of Chemical and Visual Sensors for Identifying an Odor Source in Near Shore Ocean Conditions**
  - W. Li, J. Sutton, and Y. Li, Proc of the 2008 IEEE International Conference on Machine Learning and Applications (ICMLA'08), pp. 444-449, 2008.
- **Optimization of Source Identification Algorithm Derived from Moth-Inspired Plume Tracing Strategies**
  - W. Li, and J. Sutton, Proc of the 2007 IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA'07), pp. 79-84, 2007.
- **Design of Source Identification Zones for Declaring an Odor Source in Turbulent Fluid-Advected Environments**
  - Wei Li, MM Elgassier, T Rutledge, J Sutton, Proc of 2006 IEEE International Conference on Information Reuse and Integration (IRI'06), pp. 466-471, 2006.

## Patents

### Cisco

**Addressing and managing an internal network of a virtual branch node** 9/2014

US 20160359805 A1

Spraggs; Simon James Trevor; (Hants, GB) ; Arunkumar; Nagaraj; (Saratoga, CA) ; Lakshmanan; Yegappan; (Fremont, CA) ; Persaud; Andrew; (San Jose, CA) ; Yeung; Michael; (San Jose, CA) ; Phillips; Andrew Robert; (Dubai, AE) ; Zhang; Lang; (San Jose, CA) ; O'Gorman; Michael F.; (San Carlos, CA) ; Sarbin; Brian Richard; (Santa Clara, CA) ; Sutton; Joe; (San Jose, CA) ; Singla; Vinay; (San Jose, CA)

### Electronic Arts

**Delivering and consuming interactive video gaming content** 12/2016

US 20140274384 A1

Boswell; Colin; (Millbrae, CA); Cronce; Scott; (Pacifica, CA); Grace; Owen; (Asheville, NC); Hilleman; Richard; (San Mateo, CA); Li; Lily; (Millbrae, CA) ; Liu; Qian; (Foster City, CA); McCabe; Joe; (Napa, CA); Medler; Ben; (San Francisco, CA); Sutton; Joseph; (Hayward, CA)

**Technology** Languages : Typescript, Python, HTML, CSS, C/C++, C#, Java, Bash/Shell  
Cloud : AWS, Google Cloud, Severless, Microservices, Kubernetes, CI/CD, IaC, Salesforce  
Web : RESTful, GraphQL, WebSockets, NodeJS, NestJS, NextJS, React, ReactNative, Electron  
Database : PostgreSQL, Elasticsearch/OpenSearch, DynamoDB, Redis, Firebase, SQLite, MongoDB  
Protocols : HTTP, WebSockets, XMPP, XML-RPC, MPEG4, AVI, JPEG, PNG, DCT, FFT  
AI/ML Tech : LLM, Neural Nets, Expert Systems, Matlab, Tensorflow, LangChain

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**Education** **M.S. in Computer Science** 9/2009 - 5/2011  
University of Southern California, Los Angeles, Ca