Senior Software Engineer Senior Software Engineer Senior Software Engineer - Autodesk, Inc Alameda, CA ? Well-rounded software engineer experienced with diverse types of systems and applications: 7 years focus on Backend Java (client and server), 4 years desktop .NET in C# and 6 years real-time embedded in C. Deep background in Data technologies. ? Assumed the following roles: Individual Contributor, Architect, Team Lead and Product Manager. ? Strong background in solving distributed system challenges, such as building for scalability, multi-tier caching, achieving time synchronization, managing age of data and mobile agents (patents filed) ? Solid experience designing for and working with communications systems, including unreliable ones, over various protocols and at all levels   ? Proven abilities in modeling real world behaviors and processes through Object Oriented design, Multithreading/Concurrency, Graph algorithms and other paradigms ? Enthusiastic and relentless troubleshooter, comfortable working with parties of diverse backgrounds (including end Customers) in order to isolate and resolve software issues   ? Thoroughly enjoy working with people, excellent communication and social skills. Fluent in Russian and Spanish Authorized to work in the US for any employer Work Experience Senior Software Engineer Autodesk, Inc - San Francisco, CA September 2017 to Present Work on several internal Cloud services, critical to Autodesk Cloud operation. Played crucial roles in building the associated backend components, thick multi-lingual SDKs, resiliency features and metering/ monitoring. Acted as the Engineering-level Customer support for some of those services.   ? Primary engineer on the Cross Service Eventing Service (CSE): a Streaming solution for inter-service event data transfer relying on Serverless Backend architecture (AWS Lambda), AWS Kinesis as the underlying Streaming technology, thick multilingual SDKs and AWS KMS / JWT for auth; acquired expert-level knowledge of AWS Kinesis and AWS Lambda independently and by working directly with the AWS team in Amazon   ? CSE: mentored multiple Engineering teams to help them design, scale and troubleshoot their eventing solutions. Was the primary contact point for technical issues pertaining to service during early adoption and helped dozens of Customers arrive at a stable state earning internal recognition   ? CSE: solved distributed challenges associated with multi-consumer Streaming applications: implemented checkpointing re-sync logic, designed a stream fanout

mechanism for clients to transparently use Kinesis Stream replicas and integrated the service with an in-house distributed tracing solution ? CSE: built thick SDK for both Producing and Consuming events, including the following functionality: zero data loss guarantee, explicit and implicit Consumer checkpointing, Producer data buffering, batching and failure handling, resilient STS auth token retrieval logic, extensive metric calculation and submission, Lambda-aware mode and more. ? CSE: achieved over 90% code reuse between different language SDKs (Java, C#, Python, Ruby, NodeJs) by employing Apache Thrift to interface with a local server component in Java. Automated change management and testing for all 5 SDK versions. The resulting solution, despite its relative complexity, has proven out to be exceptionally performant and problem-free ? Built extensive automated integration test suites for use with CI/CD pipelines. Those included on-the-fly AWS infrastructure creation (orchestration), load testing, failure injection, specific environment targeting and more ? Added features to several Autodesk Cloud services, examples: support for 1000x increase in notification sources (relying on scoping information stored in Cassandra DB), manage resource visibility based on provided 2LO/3LO auth token and AWS Lambda-aware mode for several components ? Performed multiple deployment / provisioning tasks using Terraform and other tools, troubleshooting resulting issues and coordinating with any affected systems and Customers Senior Developer SolarWinds LLC - San Francisco, CA March 2017 to August 2017 Work on a highly scalable multi-service stream processing solution for Metric and Alert storage, aggregation, monitoring and custom querying. Add features, perform optimizations and prototype new candidate third party components. ? Prototyped introducing Facebook-originating MCrouter routing component built for pooling multiple Memcached instances for scale. Prototype eliminated the need for consistent hashing between Librato's multi-lingual services, introduced data redundancy and vastly improved performance on Memcached node failures. The project involved development of a localized test and benchmarking environment to simulate and assess caching failures in production. ? Built a new Dropwizard-based service for real time monitoring of Kafka's producer/consumer dynamics for multiple topics and partitions. Auto discovery of Kafka's topologies from Zookeeper with the need for minimum manual configuration. In addition to submitting

monitored data to in house time series data aggregation services, duplicated the data in AWS CloudWatch. Heavily instrumented the service with additional performance metrics in order to be able to detect deterioration.   ? Introduced multiple feature and performance improvements into Librato's diverse stack of services, focusing on REST-powered data routes. Improved spike latency for Cassandra accessing endpoints by improving time deadline enforcement logic and introducing a higher degree of concurrency for portions of request processing. Java Software Engineer Neustar Inc - San Francisco, CA March 2015 to March 2017 Work on the backend of online ad data analysis, transformation and processing solutions. New feature development, automated testing frameworks, new technology prototyping, data analysis and deployment. Targeting both internal ecosystem and outside clients. Directly interact with customers, internal and external, to finalize requirements and drive implementation   ? Technical owner of a brand new highly configurable distributed data ingestion engine that accepts data from various remote sources and in various formats, then publishes it to a database for further processing. In charge of requirements, design and implementation, as well as integration with upstream (UI) and downstream (reporting) processing. Worked closely with numerous parties to achieve a successful deployment. Utilize Java/Spring Framework, AWS (SQS, SNS, S3), Tomcat, Postgres, Zookeeper (for distributed locking and queuing) and MyBatis.   ? Became a second expert engineer on Neustar's online ad event data transformation (EDT) solution. The solution accepts, transforms and publishes hundreds of gigabytes of online and offline data daily from numerous partners. It is highly scalable and runs in a clustered environment consisting of several hosts. Functionality spread between numerous Web applications interacting in real time via SQS, Zookeeper and Postgres. Enhanced EDT to accommodate new client requirements, as well as make improvements for scalability, performance and maintainability.   ? Took the lead on several highly custom Third Party online ad data processing integrations. To meet requirements, worked closely with the external customers to understand and negotiate their data delivery contracts; then built custom pre processing and post processing modules to integrate with the existing in house data transformation solutions (esp. EDT referenced above) and seamlessly deliver data for new integrations for downstream processing.   ?

Refactored legacy Excel-based regression test suite to use Cucumber and Cucumber-JVM, dramatically increasing test case readability and documentation, as well as extensibility of the suite. The knowledge and experience gained was used to refactor all in-house regression test suites.   ? Seamlessly replaced PostgresSQL with Amazon Dynamo DB for storing geographical and device data matching tables of millions of records. Proved the newer technology's ability to serve as a replacement and did a cost analysis.   ? Delivered various product features using technologies above throughout the team's product base and participated in numerous code reviews, quickly gaining expertise in the organization's code base and products.   ? Built a User configuration-driven Python application for scheduling, triggering and monitoring a series of advanced Hive data transformation scripts. The application took advantage of and managed concurrent execution. In the process, helped drive Hive script design.   ? Used the open source HiveRunner project to create internal Junit-based framework for automated testing of Hive/Hadoop scripts which were being ported from Amazon Redshift. In the process of this development, discovered long standing issues in the scripts under test. Software Project Engineer S&C Electric Company - Alameda, CA 2008 to March 2015 Focus on systems that manage, model and control multiple electric grid controllers, as well as some firmware for those controllers. Serve as an Architect or Team Lead. Drive field issue investigation and mitigation. Work with various non-technical stakeholders, including Customers, to direct the requirements definition process, thus assuming Product Management responsibilities. Even after accepting the next opportunity, engaged in short consulting sessions with this employer.

 ? Created the Data Acquisition component of the Feeder Management System application (Enterprise Java platform). It remotely monitors and manages thousands of field devices via communications channels of various capacities. Challenges encountered and resolved: unreliable communications, bandwidth optimization, device version management and asynchronous device behavior mitigation. Worked with device firmware team to implement a delta approach to data acquisition, cutting the bandwidth used by 80% by only transferring data that changed since last poll and compressing that data.   ? Owned the Windows-Based (C#/.NET) component responsible for communicating with thousands of devices in a time critical manner; managed the overseas team

responsible for its development, designed a RESTful Web Service interface to use the component from Java EE and wrote an extensive integration stress test suite (Java).   ? Took responsibility for multiple features of the Feeder Management System enterprise application, targeting all of its tiers, from Data Base/Back End to Front End/GUI. Followed Agile methodology and implemented numerous automated tests. (Java/JavaScript/SQL)   ? Technical Lead and primary developer for the IntelliTEAM Digital Test System project. A multi-component PC application that enables users to define circuit "what-if" scenarios in order to demonstrate the behavior of the IntelliTEAM distributed embedded application in lab environment. The application injects signals into intelligent embedded devices in real time, collects and analyzes results and presents them back to the User. Challenges encountered and resolved: extreme time criticality, integrating different platform components and managing dependence on hardware. (C#/.NET)   ? Designed and implemented a solution for recording, retrieving, processing, storing and visualizing field device event logs giving a chronological view of field equipment operation. Addressed clock discrepancies between devices and the need to turn verbose logs into concise presentation. This has proven to be an excellent analysis and marketing tool providing compelling transparency into S&C's field grid equipment operation that is used to secure sales and funding from Government agencies. (.NET/C#/WPF on PC side, C on embedded device side)   ? Architected IntelliTEAM Designer, a rich GUI application for modelling the Electric Grid and configuring S&C's devices in the field. Built the connectivity model and the search algorithms for it. Implemented the communications engine to configure and query devices. Provided guidance to the newly hired GUI developer. Took the lead adapting the embedded application (C, MQX RTOS) to work with IntelliTEAM Designer. Worked with Electric Utility Customers directly to solicit their input. Application increased User productivity by ~300% (C#/.NET/WPF)   ? Invented the script-driven electric fault emulation methodology for the Site Acceptance Solution. Implemented the PC Client (.NET/C#/WPF) that provides script definition and validation capabilities, distributes the script to field devices via radio/Ethernet communications, drives its distributed synchronous execution, collects and visualizes results. Implemented add-on for the embedded IntelliTEAM SG application (C/MQX RTOS) to serve as script signal injection and

control real-time module. US patent filed. Software Engineer S&C Electric Company/Automation Systems Division - Alameda, CA 2002 to 2008 In this role I focused on embedded programming of S&C's electric grid automation micro controllers as an individual contributor: ? Ported Capacitor Control embedded application to a newer platform (C, MQX RTOS, Metrowerks Code Warrior, Freescale/ColdFire). Improved legacy design, defined the architecture of the product, programmed control strategies/UI and oversaw a team in Russia that implemented DSP functionality. Worked with the hardware team to meet product requirements. Wrote an extensive automated test suite. ? EEPROM Access Access Manager (C/MQX RTOS). Helped design and implemented an intermediate firmware layer that facilitates reliable access to large SEEPROM storage, containing the "personality" of the IntelliRupter grid automation product. Introduced several layers of redundancy to successfully solve reliability problems in "noisy" environments where the data stream was being periodically disrupted. ? Ported the award-winning IntelliTEAM grid automation distributed, Agent-based system to a new platform (C/MQX RTOS) from an in-house legacy language and platform implementation. ? Helped specify, designed and implemented a flexible centralized Historic Logging Data collection firmware module which has been incorporated into four different products. The module provides for external monitoring and extended Flash storage of various categorized data. Includes rich search and query User interface. Interacted with the hardware and OS teams heavily as the module was the first written for the new platform. Education Android Development and Project Management UCB Extension 2011 to 2012 B.A. in Computer Science University of California, Berkeley - Berkeley, CA 2002 Skills VISUAL STUDIO, C#, C++, CODEWARRIOR, Cucumber Additional Information Skills: Programming Java, Python, C#, C, C++, Ruby, NodeJs, SQL, Assembly, Linux Data Postgres, MySql, Oracle, DynamoDB, Cassandra, Hive/Hadoop JDBI, MyBatis, DataStax, Hibernate, LINQ Cloud Technologies AWS (Kinesis, SQS, SNS, Dynamo DB, Cloudwatch, Lambda, S3, RDS), Terraform Zookeeper (and Apache Curator recipes), Kafka, Microservices, Splunk Web SpringBoot, Dropwizard, Tomcat, WebLogic, Memcached, Jersey, JAX RS Communications REST, THRIFT, SOAP, RMI, HTTP, Sockets, IP, TCP, DNP, RS232, DNP Testing Docker, Cucumber, JUnit, TestNG, DBUnit, HiveRunner, NUnit,

Arquillian Tools Potmn, Git, Github, Gerrit, Maven, Jenkins, CircleCI, JIRA, Confluence, Asana

IntelliJ, Eclipse, Visual Studio, Metrowerks CodeWarrior

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