

Profile

I am a dedicated and quality-minded software engineer with many years experience in product development using modern technologies. I have a clear logical mind to take a practical approach to problem-solving and a strong willingness to make the solutions come into effect. I am never afraid of new things and often my solid programming knowledge will help me learn them faster. Also, I am an enthusiast of agile development and I believe fast iteration is the core competence of the team and the product it develops. Currently I am looking for an opportunity to utilize my skills in a challenging working environment and become a valuable asset to the organisation that I work for.

Employment

Senior Software Engineer Helvar May 2017 – Present

Lighting Intelligence Platform

- Designed and implemented (Node.js) components of cloud gateway for ActiveAhead wireless lighting system where each component runs as a microservice and RabbitMQ is used as message broker and Redis as database. The gateway uses AWS IoT not only for communication but also for other tasks like gateway provisioning/registration, certificate management, software update, access control, etc.
- Created scripts (Makefile, Bash, Python) to build, configure, deploy and run cloud gateway using Docker image/container
- Developed parts of cloud backend using AWS Lambda, co-designed schema of AWS DynamoDB (NoSQL) and AWS RDS (SQL) tables, formed feature stack where other AWS services are used, for example S3, Kinesis, ElasticSearch, API Gateway, Elastic Container Registry, CloudWatch, IAM, etc
- Authored two internal libraries (rabbitmq-client and logger) and published them into company's NPM registry (both have 100% test coverage and are widely used within the team)
- Built integration and end-to-end testing frameworks using PyTest (Python) and collaborated with Devops in Jenkins integration
- Contributed definition of development procedure where coding style, code quality check (SonarQube), unit test coverage, CI/CD, Git flow, release process are involved
- Worked with both Scrum and Kanban, acted as scrum master for more than 1 year

Software Engineer LUMO Connections Nov. 2016 – Apr. 2017

Smart Lamp

- Implemented RESTful APIs by Express framework (Node.js) on Raspberry Pi
- Developed a tiny HTTP server (C/C++) that integrated with WiFi manager on ESP8266 (NodeMCU)

Software Engineer, Researcher Aalto University Sept. 2011 – Oct. 2016

Adaptive 6LoWPAN Packet Size Control

- Applied SciPy to analyse and visualize massive 6LoWPAN packet data
- Proposed *first linear then exponential* algorithm that improved throughput up to 40%
- Presented paper in a well-known conference EWSN2015

Multicast for Constrained Networks

- Implemented a prototype of IPv6 Multicast Listener Discovery on Contiki OS
- Established a test bed for MPL (RFC7731) and evaluated its performance against flooding
- Drafted a simplified multicast protocol for constrained networks based on PIM-SSM

MAMMOTH - Massive Scale Machine to Machine Service

- Implemented an HTTP-CoAP mapping layer on Contiki OS
- Deployed more than 1000 emulated and real constrained devices on the platform

Software Engineer	Nokia Research Center	Nov. 2009 – Aug. 2011
Rich Context Mobile Platform		
<ul style="list-style-type: none"> • Developed a publish-subscribe messaging mechanism for widgets on N900 • Filed a patent (US 20140237486 A1) on inter-widget communication 		
Handwriting Calculator		
<ul style="list-style-type: none"> • Implemented user interface using GTK+ on Maemo platform • Released on Nokia Beta Labs and won outstanding project award 		
Software Engineer, Intern	IBM	June 2009 – Sept. 2009
<ul style="list-style-type: none"> • Tested localization and globalization translations for Lotus Software • Developed a Perl script to detect empty translations of the content 		

Additional Project Experience

- Web Developer (2017): Developed a LAMP website to calculate sales commission for tourist chain stores
- Web Developer (2016): Built an e-commerce website (`store.kanssani.fi`) using WooCommerce
- Website Administrator (2012 - 2016): Maintained a phpBB forum for scholar and student community
- Teaching Assistant (2015): Taught two course assignments (P2P networking and WiFi positioning)

Education

Espoo, Finland	Aalto University	Sept. 2011 – Aug. 2016
<ul style="list-style-type: none"> • Ph.D candidate in Computer Science and Engineering. GPA: 4.77/5 		
Beijing, China	Beijing University of Posts and Communications	Sept. 2003 – Apr. 2010
<ul style="list-style-type: none"> • Master's Degree in Computer Networking, April 2010. GPA: 4.0/5 • Bachelor's Degree in Computer Science and Engineering, June 2007. GPA: 4.4/5 		

Skills

- Programming: JavaScript(Node.js), Python, Bash, C/C++, Java
- Platform: Unix/Linux, AWS services, Docker
- Utilities: MySQL, NoSQL (Redis, DynamoDB, ElasticSearch), RabbitMQ
- Tools: Git, GNU Make, Jenkins, Sonarqube, Jira, VSCode
- Knowledge: Scrum, Kanban, Microservices, TDD/BDD, RESTful API, OOP, DevOps