

# Sam Rayatnia

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## PROFILE

As a software and neuroscience enthusiast with more than **12 years** of experience, I have dedicated my career to creating products that improve people's lives. I value honesty, learning from mistakes, and crafting products I use myself. I have been part of diverse journeys (**more than 50 services**) from start-ups to market-dominating enterprises, including AR/VR services, FinTech, Health Care, and Navigation Systems. **This CV focuses on my experience from 2015 onwards.**

## SKILLS

- **Programming Paradigms:** OOP, POP/AO, FP, FRP, Declarative Programming.
- **Languages:** Swift (1.0 - 6.0), Objective-C, C/C++ (95/11/17), **Python (2.4 - 3.12)**, **Kotlin**, **Java**, goLang.
- **Technical Knowledge:** **System Design**, **Design Patterns**, **Software Architecture**, Computational Neuroscience, Neural Network, Deep Learning, Machine Learning, REST, HTTP/2, g/RPC, HTTP/3, Sockets(UDP/TCP), WebRTC, Data Structures, Algorithms, TDD, BDD, Stress Tests, Integration Tests, Hardware-Software Co-design, VLSI, Hardware Security penetration, HPC.
- **Soft Skills:** Resource Management, Team Work, Team Management, Planning, Conflict Resolution, Risk Management, **Building Trust**, **Emotion Regulation and Ignition**, **Budget Management**, **Feedback**.
- **Web Technologies:** Spring Boot, Flask, FastAPI, Django, Tornado, ExpressJS, Angular, React, Postgres, MySQL, RabbitMQ, Redis, AWS, GCE, Docker, Ansible, Terraform, Kubernetes, Microservices.
- **iOS Engineering:** SwiftUI(1 - 6), UIKit (iOS 4.0+), Testing, XCTest, Snapshot Testing, Instruments, Xcode Cloud, Quartz, Core/Animation, Foundation, CoreML, CCCrypt, CallKit, WebKit, ARKit, SpriteKit, MapKit, Metal/OpenGL, Contacts, CreateML, Swinject, Fastlane, Quick, Nimble.

## EDUCATION

### Shahid Beheshti University

*M.Sc. in Computer Systems Architecture and Organization*

Tehran, Iran.

Sep 2018 – Jun 2021

*Brain Network Modelling using Complex Fractal Networks with Different Dynamics to Study Avalanches*

- Notable Courses: Advanced Networks, Bio-Inspired Modelling, Computer Arithmetic, Hardware Security.
- Side Projects: Soha AI Prompt Service.

### Babol Noshirvani University of Technology

*B.Sc. in Computer Software Engineering*

Babol, Iran

Sep 2012 – Sep 2017

*Design and Implementation of EEG Data Analysis Tools (Second Brain)*

- Notable Courses: **Advanced Algorithms**, **Graph Theory and Applications**, ACM, Operating Systems, Quantum mechanics, **Fundamental of Machine Learning**.
- Side Projects: **Motor Imagery Data Classification**, Yacc LALR Compiler, Ranking Software for Students, Library Software, Various Web Services

## MANAGEMENT WORK EXPERIENCES

### Nimmsta GmbH

*Software Engineering Team Lead*

Munich, Germany

May 2023 – Nov 2024

- Restructured team and inter-team communication, resulting in a 40% increase in team performance.
- Led, mentored, and coached engineers, resulting in two new team leads and six new hires.
- Successfully prototyped, developed and released cloud-based workflow platform, SSO, OMS, Linux SDK, Android apps and SDK, and internal automation tools, increasing revenue by 70%.
- Researched, developed, and maintained core/communication SDKs from scratch, leading to the production of a new device using **Kotlin Multi-Platform (KMM)**.
- Restructured projects and defined coding style and processes, leading to performance improvement in terms of development **speed by 34%, resource usage by almost 40%, and cost reduction by 31%**.
- Provided constant support for customers and the customer support team to guarantee under-a-day response/solution.

### Neuromatch Academy

*Co-CTO, Software Engineer, Lecturer, Lead TA, TA*

Remote, Los Angeles, CA

Jul 2020 – May 2023

- Developed and deployed ML/AI model serving frameworks, enabling students to build their own portfolios.
- Optimized ML/AI model training processes, reduced build times significantly, hence improving execution speed.
- Enhanced automation to streamline development workflows and improve efficiency.
- Mentored students on ML/AI model development and deployment best practices. as well as Teaching computational neuroscience and deep learning since 2020.
- Updated and maintained the tech stack, increasing project interest from two to eight team members.
- Redesigned portal, introduced dynamic redirector, and many more features to increase student engagement and improve tracking.

**Rahtech Sharif**  
*Lead iOS Engineer*

Tehran, Iran  
*Jun 2019 – May 2020*

- Designed and developed dozens of SDKs with C++, C, Objective-C, and Swift for navigation, an encrypted map renderer SDK, a routing SDK, and more.
- Spearheaded the design and implementation of navigation applications with robust security measures, including end-to-end encryption and custom obfuscation algorithm on tile renderer, This resulted in securing all of map information and user feedbacks.
- Cultivated a high-performing mobile team through mentorship and coaching, fostering a collaborative and growth-oriented environment. This led to increasing capacity to get customer order and increase revenue by almost 50%.
- Partnered with the CTO and product team to define the product roadmap and KPIs, focusing on navigation application and customer products, resulting 2 quarter 100% delivery rate.

**Sandshare**  
*Lead Software Engineer/Manager*

Remote, Toronto, Canada  
*Oct 2015 – Aug 2017*

- Led, Mentored and coached software engineering teams in projects such as Sandshare (LMS), TweetRide (ride sharing), and Vejeen (e-commerce).
- Architecture Design for services, and database management to increase productivity speed as well as services performance.

## WORK EXPERIENCES

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**Spacific GmbH**  
*Senior iOS Engineer*

Hamburg, Germany  
*Jan 2023 – May 2023*

- Developed an all-purpose measurement app using ARKit, improving precision for multi-story building scanning.
- Improved ARKit precision by segmenting the world and using a union method, enabling users to scan multi-story buildings without losing precision.
- Designed and developed an intersection algorithm to improve edge detection in start-case scenarios.

**Note: Due to the company's insolvency the contract ended.**

**DoctorBox GmbH**  
*Senior iOS Engineer*

Berlin, Germany  
*May 2022 – Dec 2022*

- Implemented a design system and developed modular features such as onboarding and a symptom checker, leading to an 80% increase in development speed and meeting business requirements.
- Introduced and implemented a task scheduler for offline background processes to improve user experience for services such as KYC, which has no notification service, helping customer support reduce verification time to two hours.

**Check24 GmbH**  
*Senior iOS Engineer*

Munich, Germany  
*Nov 2021 – May 2022*

- Introduced and prototyped an auto DTO generator to reduce the number of conflicts and bugs.
- Implemented new features such as a multi-variant product selection view with modern approaches, a home widget, and an app widget to improve user experience and interactions.
- Prototyped a price detection and Labeling system using ARKit, CoreML, and Metal.

**Divar**  
*Senior iOS Engineer*

Tehran, Iran  
*Jun 2021 – Oct 2021*

- Added new features to the real-estate team, such as VR, ledger binder, and more user-interactive filter attributes, leading to rapid expansion of the vertical and increased revenue.
- Pitched and contributed new ideas to open-source libraries, such as network interceptors and the company's Design system.
- Fixed the routing problem between core SDKs and the dynamic widget renderer system.

**Technologies: UIKit, SwiftUI, gRPC, CFNetwork, Networking, XCTest, Snapshot Testing, and more.**

**Techran Co**  
*Lead iOS Engineer*

Tehran, Iran  
*Jul 2020 – Jul 2021*

- Designed software architecture and implemented three different apps from the ground up: augmented reality (WheelUp), a health application (Dialog), and an inventory manager (Yas).

**Sishemi**  
*iOS Team Lead*

Tehran, Iran  
*May 2020 – Jul 2020*

- Managed, designed architecture, and developed various applications within a short timeframe, including a movie critic social media app, an AR app, and multiple customer projects.
- Led, mentored, and coached more than 13 iOS developers, including two senior, five mid-range, three junior, and three interns, on their career paths as well as business growth.
- Developed Xcode plugins to enforce code quality standards, resulting in improved memory management.

**Note: Due to the pandemic and financial burden on the company, I handed over my responsibilities to one of the senior developers.**

**Digipay - Digikala Group**  
*Team Lead/Senior Software Engineer*

Tehran, Iran  
*Jul 2018 – Nov 2018*

- Designed and implemented payment applications with intense security measures and usage of OCR CNN-based card reader feature.
- Provided merchant, in-app purchase, and payment SDKs in React-Native, Swift and Objective-C with SDK size less than 900KB and memory usage around 9MB with window management.

## FREELANCE

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- Collective** 2012 – 2024
- Spearheaded the design and development of a diverse portfolio of web services, encompassing real-time solutions like carpooling and messaging platforms, as well as high-volume operational services such as workflow engines and social media.
- Doctor MyCo** 2020
- Using modern Swift API for call including CallKit, in a QT based project with background process over WebRTC.
- Sepehr Cloud CC** 2018
- Social Media based E-Commerce App Generator using Python and Swift from Ground Up to generate Pure Swift And Well Designed Widget Base Applications, with encryption such as AES-CBC Encryption using CCCrypt.
- Mediana** 2019
- Social Media Podcast Player from Ground Up using Swift, AVKit, AVFoundation, and Foundation.
- Behpardakht Mellat** 2017 – 2018
- Maintained old payment applications and designed and implemented a new Sekkeh payment super application from the ground up with features such as NFC payment, leading to 5 million new users.

## OPEN-SOURCE PROJECTS

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- NetShear**
- Open-Source Network manipulator and interceptors
- SNetwork**
- Open-Source Protocol Oriented lightweight Solution for Networking in Swift.

## CERTIFICATES & EXTRA-CURRICULAR

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- Composable SwiftUI Architecture Using Redux** (Dec 2022)  
*LinkedIn*
- Managing and Leading Developers** (Dec 2022)  
*LinkedIn*
- Advance Your Skills as a Manager** (Dec 2022)  
*LinkedIn*
- Technical Mentor** (Apr 2019)  
*Robonit, Noshirvani University*
- Lecturer** (May 2016)  
*Third Workshop in Computational Neuroscience, Institute for Research in Fundamental Sciences*
- Lecturer** (June 2015)  
*IRPycon*

## LANGUAGES

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English: C1 Proficiency      Persian: Native Speaker      German: Basic Knowledge