# Kousha Talebian *Principal Engineer*

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 3106 - 128 West Cordova St, V6B 0E6 Vancouver, Canada

## 🎓 EDUCATION

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|---|---|
| 2012 – 2014 | **Master of Applied Science**<br>*Univeristy of British Columbia*<br>• Analyzed the performance, effectiveness and robustness of L1 Adaptive Control theory as applied to the closed-loop control of anesthesia. Proved the theory is invalid.<br>• Developed and simulated a real-time oscillation detection methodology and an adaptive auto-relay-based algorithm to auto-tune the controller and remove oscillation.<br>• Scholarship: NSERC's EiS Funding (total: $50,000). |
| 2006 – 2011<br>Vancouver, Canada | **Bachelor of Applied Science - Engineering Physics with Electrical Options**<br>*University of British Columbia*<br>• Specialized in optics as well as PCB design and fabrication.<br>• Scholarships: President's Entrance Scholarship, Golden Key Chapter, Dean's Honor Roll (total: $10,000). |

## 💼 PROFESSIONAL EXPERIENCE

**Twilio, Inc**

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| 03/2023 – present<br>Vancouver, Canada | *Principal Engineer*<br>• Assisted as a "loan architect" to different teams to help design their new products and help with cross-team collaboration.<br>• Designed and built the Twilio Flex special Business Continuity Mode, a degraded fallback system. |
| 01/2022 – 03/2023<br>Vancouver, Canada | *Principal Engineer - Tech Lead*<br>• Designing the next generation of Twilio Flex contact-center product in a team of 10 other Tech Leads and 2 Senior Architects.<br>• Leading a team of 8 engineers to develop the execution engine of the product using Temporal. The expected system load is 1,000 step transitions per second, a 3x fold increase over the existing Twilio Studio engine. |
| 04/2020 – 12/2021 | *Staff Engineer - Tech Lead*<br>• Improved the reliability of Twilio's Flex edge service by reducing the number of incidents from once a week to almost no incidents in over a year.<br>• Improved the performance of the edge service. A single node can perform 1k req/sec, vastly outperforming the Twilio API's edge service.<br>• Designed and developed the entire stack of the Twilio Flex Plugins ecosystem. The stack includes a Java API backend and a TypeScript CLI interface.<br>• Designed the standard model of gameday that is now used throughout Twilio Flex. This model has increased resiliency and a better informative session for junior engineers.<br>• Owner of the Twilio Flex CDN deployment pipeline. |
| 01/2018 – 04/2020<br>San Francisco, USA | *Senior Engineer*<br>• A team of 2 engineers developed the first version of the company's Serverless environment (Twilio Functions), handling 500/sec Function invocation.<br>• Designed and developed the second version of the Twilio Functions and Assets.<br>• Contributed to the GAing of the Twilio Studio (workflow execution engine) platform. |
| 05/2016 – 01/2018<br>San Francisco, USA | *Software Engineer*<br>• Developed an API Explorer from the company's internal API definition. The system has been running without maintenance since it was deployed in 2017. |

- Designed, developed and shipped the second and third generations of the company-wide debugger platform.
- Led the company's transition from jQuery to React application. Developed the first generation of the deployment pipeline, eventually leading to a more streamlined development of front-end code deployment across the company.

02/2015 – 05/2016
Redwood City, USA

**iCracked Inc**
*Junior Software Engineer*
- A team of 3 designed and manufactured an SoC computer from start to finish that includes the battery, WiFi, BLE 4.0, and Qi. Sold out an initial batch of 200 devices in 2 days, generating a revenue of $50,000.
- Custom Linux OS boots in 12 seconds (10 seconds faster than Debian) and leverages hardware components.
- Developed a powerful dashboard, allowing remote monitoring and controlling of all the computers, deploying Over-The-Air updates, managing user access to the units, and secure tunnelling a local port to a public domain.

09/2013 – 09/2015
Vancouver, Canada

**S&K Cloud Computing**
*Co-Founder*
- Working with three customers, most notably, a municipality government. Two additional districts are interested.
- Developed the UX and UI. The front end is an MVW pattern in AngularJS. The back end is the MVC pattern in Laravel.
- The graphical interface mimics existing office practices, eliminating a staff learning curve.
- Automatic exporting to Excel and Google/Apple calendar syncing

05/2011 – 01/2013
Vancouver, Canada

**Madison's Group (UBC)**
*Electrical Engineer*
- Reduced the design cost of the vacuum pump by 30% ($400,000) through 3D simulation of the system on SolidWorks.
- Regulated internal temperature and pressure of a vacuum pump using custom sensors powered by an Arduino.
- Simulated a magnetic field using Python to compute the trap dimensions needed to generate the field. Used simulation to prove the feasibility of the system.

08/2012 – 07/2014
Vancouver, Canada

**Sauder Summit Global Case Competition**
*Co-Chair*
- Led a team of 70 in the first and second year of the university's annual signature six-day conference through planning & execution of the event attended by 60 international competitors, 70 professionals & 400 spectators.
- Secured $100,000 of sponsorship by establishing a value-based relationship with donors.

05/2010 – 05/2011
Würzburg, Germany

**Lehrstuhl Für Technische Physik**
*Physicist*
- Automated data collection by LabVIEW and analysis by MATLAB and Mathematica, resulting in a 96% reduction in labour intensity (24 to 1 hr) and a 15% increase in accuracy.
- Increased precision of semiconductor growth by 80% through automation; results were published in DPG.

## 🧠 SKILLS

- Java
- Python

- TypeScript/JavaScript
- NodeJS

- Databases
- PHP

- Lua/OpenResty
- Temporal

## 🎸 INTERESTS

- Musical Instruments
- Airplanes
- Traveling
- Languages