

# Daniel Perez

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🐙 GitHub (danhper)      🎓 Google Scholar (bit.ly/dan-gs)

## education

- Sep 2018 – *PhD candidate* at **Imperial College London** London, UK  
Present      Research on using programming language techniques to improve the security of blockchains' virtual machines and the applications running on top of them.  
Supervisor: Benjamin Livshits
- Mar 2018      *Master of Computer Science* at **The University of Tokyo** Tokyo, Japan  
Specialization in machine learning application to programming languages.  
Worked on cross-language source code clone detection using semi-supervised learning. Presented the work at MSR'19.  
Supervisor: Shigeru Chiba
- Sep 2013      *Bachelor of Computer Science* at **Waseda University** Tokyo, Japan  
Specialization in operating systems and distributed systems.  
Graduated as Computer Science department representative  
Supervisor: Tatsuo Nakajima
- Jun 2008      *French Baccalauréat* with high honours Paris, France  
Scientific series with physics specialization

## work experience

- Jan 2020 – *Researcher & Software Engineer* at **Interlay, Inc.** London, UK  
Present      Developing a bridge allowing to seamlessly use Bitcoins on Polkadot
- Apr 2018 – *Freelance Machine Learning Engineer* at **Uzabase, Inc.** Tokyo, Japan  
Present      Working on various natural language processing tasks such as entity extraction, text classification or recommender systems.
- Aug 2014 – *Founder and CTO* of **Claude Tech, Inc.** Tokyo, Japan  
Aug 2018
  - Make our product Buildy profitable after ~2 years
  - Project management in a team of 4-5 persons
  - Full stack development (backend, frontend, DevOps)
- Mar 2017 – *Freelance Software Engineer* for **Recruit Institute of Technology, Inc.** Tokyo / Mountain View, CA  
Mar 2018
  - Design and development in Python of Joybot, a chatbot system
  - Development of chatbot natural language understanding module
- Aug 2013 – *Freelance Software Engineer* for **Recruit Co., Ltd.** Tokyo, Japan  
Apr 2015
  - Development of Usagi Note web API in Ruby. First service to exit Recruit Ventures
  - Development of webservice backend in Java
- Jan 2013 – *Software engineer* at **Institute of Information Technology, Inc.** Tokyo, Japan  
Aug 2014
  - Joint research with Institute of Information Security on Linux security. Kernel patches and Linux MAC modules development
  - Image recognition algorithms development with C# and OpenCV
- Oct 2013 – *Software engineer* at **Fringe 81 inc** Tokyo, Japan  
Feb 2014
  - Development and evaluation of fingerprint based browser tracker
  - Design and implementation of realtime log analysis system

Oct 2012– Dec 2012     *Software engineer intern at **GREE, Inc.*** Tokyo, Japan  
• Development of flare, a key/value store written in C++  
• Development of a blob storage written in Haskell

## awards & grants

Oct 2019     **Binance X Fellowship**  
Received a fellowship of 15k USD from Binance X to work on a market data aggregation framework

Oct 2018     **Tezos Foundation Grant**  
Received a grant of 51k GBP from the Tezos Foundation to support my PhD studies

June 2015     **Paypal Battlehack 2015 Japan winner and world finalist** Tokyo, Japan  
Developed TalkNPick, a video editing system which automatically tracks audio input fluctuations and extracts the most important segments in a video.

Jun 2014     **Selected for Mitou program 2014** Tokyo, Japan  
Granted ~20k\$ by Japan Information-technology Promotion Agency to develop Buildy, a service to help small businesses to easily create their own mobile application.

Feb 2014     **Open Hack Day Japan 2 winner and IDCf award** Tokyo, Japan  
Won largest hackathon in Japan (>300 participants). Developed SmartWalk, an application which helps people walking safely while looking at their phone.

## projects

### asdf-vm

Open source tool to manage multiple language runtime versions with a single CLI tool. Core maintainer for over 4 years. Over 8k stars on GitHub.

### BigCode tools

Set of tools to work with source code, developed as part of my research. It contains tools to help with code preprocessing, such as vocabulary generation or token embeddings.

### DeepSentence

Multi-source summarization application using abstractive summarization for title generation. Awarded research grant of ~1000 USD for the project.

### Atomic Chrome

Atom editor and Google Chrome plugin to live edit textareas directly in Chrome. Plugin has >50k downloads and has been on Hacker News top and Atom featured packages.

## languages

<b>French</b>	native	<b>Japanese</b>	fluent (JLPT N1 165/180)
<b>English</b>	fluent (TOEFL iBT 108/120)	<b>Spanish</b>	intermediate
<b>German</b>	Intermediate		

## publications

Smart Contract Vulnerabilities: Vulnerable Does Not Imply Exploited

**Daniel Perez** and Benjamin Livshits

to appear at the 30th USENIX Security Symposium. 2021

DeFi Protocols for Loanable Funds: Interest Rates, Liquidity and Market Efficiency

Lewis Gudgeon, Sam M. Werner, **Daniel Perez** and William J. Knottenbelt

to appear at the 2nd ACM Conference on Advances in Financial Technologies, AFT. 2020

The Decentralized Financial Crisis: Attacking DeFi

Lewis Gudgeon, **Daniel Perez**, Dominik Harz, Arthur Gervais and Benjamin Livshits

Crypto Valley Conference on Blockchain Technology, CVCBT. 2020

## Fast-Fourier-Forecasting Resource Utilisation in Distributed Systems

Paul J. Pritz, **Daniel Perez** and Kin K. Leung

29th International Conference on Computer Communications and Networks, ICCCN. 2020

## Step on the Gas? A Better Approach for Recommending the Ethereum Gas Price

Sam M. Werner and Paul J. Pritz and **Daniel Perez**

to appear at the 2nd International Conference on Mathematical Research for Blockchain Economy, MARBLE. 2020

## PoolSim: A Discrete-Event Mining Pool Simulation Framework

Sam M Werner and **Daniel Perez**

1st International Conference on Mathematical Research for Blockchain Economy, MARBLE 167–182. Springer, 2020

## Broken Metre: Attacking Resource Metering in EVM

**Daniel Perez** and Benjamin Livshits

27th Annual Network and Distributed System Security Symposium, NDSS. *The Internet Society*, 2020

## Revisiting Transactional Statistics of High-scalability Blockchain

**Daniel Perez**, Jiahua Xu and Benjamin Livshits

to appear at the Internet Measurement Conference 2020, IMC. 2020

## Cross-language clone detection by learning over abstract syntax trees

**Daniel Perez** and Shigeru Chiba

2019 IEEE/ACM 16th International Conference on Mining Software Repositories, MSR. 2019

## TxChain: Efficient Cryptocurrency Light Clients via Contingent Transaction Aggregation

Alexei Zamyatin, Zeta Avarikioti, **Daniel Perez** and William J Knottenbelt

*Cryptology ePrint Archive: Report 2020/580*, 2020