

Daniel Perez

✉ daniel@perez.sh <https://daniel.perez.sh>

🐙 [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

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

publications

Smart Contract Vulnerabilities: Vulnerable Does Not Imply Exploited

Daniel Perez and Benjamin Livshits

to appear at the 30th USENIX Security Symposium. 2021

Revisiting Transactional Statistics of High-scalability Blockchain

Daniel Perez, Jiahua Xu and Benjamin Livshits

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

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

TxChain: Efficient Cryptocurrency Light Clients via Contingent Transaction Aggregation

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

to appear at the 4th International Workshop on Cryptocurrencies and Blockchain Technology, CBT. 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

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

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

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

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

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