Jose Nahuel **Freitas**

PHD IN PHYSICS. SOFTWARE DEVELOPER. RESEARCHER.

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Education

University of Buenos Aires   *Buenos Aires, Argentina.*

PHD IN PHYSICAL SCIENCES   *Apr. 2012 - Apr. 2017*

- Funded with a national level fellowship given by the Argentinian goverment.
- Thesis advisor: Juan Pablo Paz (paz@df.uba.ar)

University of Buenos Aires   *Buenos Aires, Argentina*

LICENCIATE IN PHYSICAL SCIENCES   *Apr. 2006- Jun. 2011*

- Grade point average (GPA): 9.47 over 10

Skills

Programming Python, C/C++, NumPy/SciPy, MPI, Matlab, SQL, LaTeX
Languages Spanish, English

Scientific Background

PUBLICATIONS

2018	**Neural Quantum Operations and Susuki-Trotter evolution of Neural Quantum States**	
	JN Freitas, G Morigi, V Dunjko. *In preparation*	
2017	**How much can we cool a quantum oscillator? A useful analogy to understand laser cooling as a thermodynamical process**	
	JN Freitas, JP Paz. *Accepted in Physical Review A. arXiv:1710.11554*	
2017	**Fundamental limits for cooling of linear quantum refrigerators**	
	JN Freitas, JP Paz. *Phys. Rev. E 95, 012146*	
2016	**Automation of the Bechdel-Wallace test**	
	JN Freitas, M Rosenzvit, S Muller. *Journal of Ethics and Films*	
2015	**Heat transport through ion crystals**	
	JN Freitas, E Martinez, JP Paz. *Physica Scripta, Volume 91, Number 1*	
2014	**Analytic solution for heat flow through a general harmonic network**	
	JN Freitas, JP Paz. *Phys. Rev. E 90, 042128*	
2012	**Dynamics of Gaussian discord between two oscillators interacting with a common environment**	
	JN Freitas and JP Paz. *Phys. Rev. A 85, 032118*	

POST-GRADUATE COURSES

2014   **Introduction to Cellular and Molecular Biology.**, UBA

Experience

PLAT Corp.   *Seoul, S.Korea*

CO-FOUNDER & SOFTWARE ENGINEER   *Jan. 2016 - PRESENT*

- Implemented RESTful API server for car rental booking application(CARPLAT in Google Play).
- Built and deployed overall service infrastructure utilizing Docker container, CircleCI, and several AWS stack(Including EC2, ECS, Route 53, S3, CloudFront, RDS, ElastiCache, IAM), focusing on high-availability, fault tolerance, and auto-scaling.
- Developed an easy-to-use Payment module which connects to major PG(Payment Gateway) companies in Korea.

Undergraduate Research, Machine Learning Lab(Prof. Seungjin Choi)   *Pohang, S.Korea*

RESEARCHER   *Mar. 2016 - Exp. Jun. 2017*

- Researched classification algorithms(SVM, CNN) to improve accuracy of human exercise recognition with wearable device.
- Developed two TIZEN applications to collect sample data set and to recognize user exercise on SAMSUNG Gear S.

R.O.K Cyber Command, MND
Seoul, S.Korea

Software Engineer & Security Researcher (Compulsory Military Service)
Aug. 2014 - Apr. 2016

- Lead engineer on agent-less backtracking system that can discover client device's fingerprint(including public and private IP) independently of the Proxy, VPN and NAT.
- Implemented a distributed web stress test tool with high anonymity.
- Implemented a military cooperation system which is web based real time messenger in Scala on Lift.

NEXON
Seoul, S.Korea & LA, U.S.A

Game Developer Intern at Global Internship Program
Jan. 2013 - Feb. 2013

- Developed in Cocos2d-x an action puzzle game(Dragon Buster) targeting U.S. market.
- Implemented API server which is communicating with game client and In-App Store, along with two other team members who wrote the game logic and designed game graphics.
- Won the 2nd prize in final evaluation.

Undergraduate Research, Computer Vision Lab(Prof. Bohyung Han)
Pohang, S.Korea

Researcher for <Detecting video's torrents using image similarity algorithms>
Sep. 2012 - Feb. 2013

- Researched means of retrieving a corresponding video based on image contents using image similarity algorithm.
- Implemented prototype that users can obtain torrent magnet links of corresponding video relevant to an image on web site.

Software Maestro (funded by Korea Ministry of Knowledge and Economy)
Seoul, S.Korea

Software Engineer Trainee
Jul. 2012 - Jun. 2013

- Performed research memory management strategies of OS and implemented in Python an interactive simulator for Linux kernel memory management.

ShitOne Corp. (Start-up company)
Seoul, S.Korea

Software Engineer
Dec. 2011 - Feb. 2012

- Developed a proxy drive smartphone application which connects proxy driver and customer. Implemented overall Android application logic and wrote API server for community service, along with lead engineer who designed bidding protocol on raw socket and implemented API server for bidding.

SAMSUNG Electronics
S.Korea

Freelance Penetration Tester
Sep. 2013, Mar. 2011 - Oct. 2011

- Conducted penetration testing on SAMSUNG KNOX, which is solution for enterprise mobile security.
- Conducted penetration testing on SAMSUNG Smart TV.

Extracurricular Activity

B10S (B1t 0n the Security, Underground hacker team)
S.Korea

Core Member
Nov. 2011 - PRESENT

- Gained expertise in penetration testing areas, especially targeted on web application and software.
- Participated on a lot of hacking competition and won a good award.
- Held several hacking competitions non-profit, just for fun.

WiseGuys (Hacking & Security research group)
S.Korea

Member
Jun. 2012 - PRESENT

- Gained expertise in hardware hacking areas from penetration testing on several devices including wireless router, smartphone, CCTV and set-top box.
- Trained wannabe hacker about hacking technique from basic to advanced and ethics for white hackers by hosting annual Hacking Camp.

PoApper (Developers' Network of POSTECH)
Pohang, S.Korea

Core Member & President at 2013
Jun. 2010 - Jun. 2017

- Reformed the society focusing on software engineering and building network on and off campus.
- Proposed various marketing and network activities to raise awareness.

PLUS (Laboratory for UNIX Security in POSTECH)
Pohang, S.Korea

Member
Sep. 2010 - Oct. 2011

- Gained expertise in hacking & security areas, especially about internal of operating system based on UNIX and several exploit techniques.
- Participated on several hacking competition and won a good award.
- Conducted periodic security checks on overall IT system as a member of POSTECH CERT.
- Conducted penetration testing commissioned by national agency and corporation.

MSSA (Management Strategy Club of POSTECH)
Pohang, S.Korea

Member
Sep. 2013 - Jun. 2017

- Gained knowledge about several business field like Management, Strategy, Financial and marketing from group study.
- Gained expertise in business strategy areas and inisght for various industry from weekly industry analysis session.

Honors & Awards

INTERNATIONAL

2017	**Finalist**, DEFCON 25th CTF Hacking Competition World Final	*Las Vegas, U.S.A*
2014	**Finalist**, DEFCON 22nd CTF Hacking Competition World Final	*Las Vegas, U.S.A*
2013	**Finalist**, DEFCON 21st CTF Hacking Competition World Final	*Las Vegas, U.S.A*
2011	**Finalist**, DEFCON 19th CTF Hacking Competition World Final	*Las Vegas, U.S.A*
2012	**6th Place**, SECUINSIDE Hacking Competition World Final	*Seoul, S.Korea*

DOMESTIC

2015	**3rd Place**, WITHCON Hacking Competition Final	*Seoul, S.Korea*
2013	**Silver Prize**, KISA HDCON Hacking Competition Final	*Seoul, S.Korea*
2013	**2nd Award**, HUST Hacking Festival	*S.Korea*
2010	**3rd Award**, HUST Hacking Festival	*S.Korea*
2012	**3rd Award**, Holyshield 3rd Hacking Festival	*S.Korea*
2011	**2nd Award**, Holyshield 3rd Hacking Festival	*S.Korea*
2011	**5th Place**, PADOCON Hacking Competition Final	*Seoul, S.Korea*

Presentation

6th CodeEngn (Reverse Engineering Conference)   *Seoul, S.Korea*
PRESENTER FOR <DEFCON 20TH : THE WAY TO GO TO LAS VEGAS>   *Jul. 2012*
- Introduced CTF(Capture the Flag) hacking competition and advanced techniques and strategy for CTF

6th Hacking Camp - S.Korea   *S.Korea*
PRESENTER FOR <METASPLOIT 101>   *Sep. 2012*
- Introduced basic procedure for penetration testing and how to use Metasploit

Writing

A Guide for Developers in Start-up   *Facebook Page*
FOUNDER & WRITER   *Jan. 2015 - PRESENT*
- Drafted daily news for developers in Korea about IT technologies, issues about start-up.

AhnLab   *S.Korea*
UNDERGRADUATE STUDENT REPORTER   *Oct. 2012 - Jul. 2013*
- Drafted reports about IT trends and Security issues on AhnLab Company magazine.

Program Committees

2016	**Problem Writer**, 2016 CODEGATE Hacking Competition World Final	*S.Korea*
2013	**Organizer & Co-director**, 1st POSTECH Hackathon	*S.Korea*
2012	**Staff**, 7th Hacking Camp	*S.Korea*
2012	**Problem Writer**, 1st Hoseo University Teenager Hacking Competition	*S.Korea*
2012	**Staff & Problem Writer**, JFF(Just for Fun) Hacking Competition	*S.Korea*