

# Curriculum Vitae

# Omid Sani

(Last updated on: 12/2/2018)

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## Education

- 2015–present **PhD, Electrical Engineering**, *University of Southern California*, Los Angeles, USA.  
Adviser: Professor Shanechi (<https://nseip.usc.edu>)
- 2013–2015 **MSc, Bioelectric**, *EE Dept.*, Sharif University of Technology, Tehran, Iran.  
Adviser: Professor Shamsollahi (<http://sharif.edu/~mbshams>)
- 2009–2013 **BSc, Electrical Engineering**, *Sharif University of Technology*, Tehran, Iran.
- 2002–2009 **Middle and high school**, *Allameh Helli, NODET (National Organization for Development of Exceptional Talents)*, Tehran, Iran.

## Research Interests

Brain Machine Interfaces, Neural Interfacing, Neural Prosthesis, Signal Processing

## Research Experience

- 2015–present **Neural Systems Engineering & Information Processing Lab (NSEIP Lab)**, USC, California, USA.
- 2012–2015 **Biomedical Signal and Image Processing Laboratory (BiSIPL)**, *Sharif University of Technology*, Tehran, Iran.  
MSc Thesis: Detection of Movement Related Cortical Potentials in EEG  
BSc Thesis: Event Related Potentials in Brain Computer Interfaces  
→ Implemented an online brain computer interface (<https://youtu.be/nr-rgv1xnzE>).  
→ Awarded by the department as one of the distinguished BSc projects of the year.  
→ IEEE Iran section Best BSc Thesis Award of the year 2014 (jointly won with another thesis).
- Summer **Internship at the CNBI Lab** (<http://cnbi.epfl.ch>)
- 2014 **International Summer Research Program**, *EPFL*, Lausanne, Switzerland.  
→ The program provides funding for living, housing and travel expenses.  
→ The results from our research were presented at EMBC conference in 2016.

## Publications

### Journal Papers

- 2018 O. G. Sani\*, Y. Yang\*, M. B. Lee, H. E. Dawes, E. F. Chang†, M. M. Shanechi†, “Mood variations decoded from multi-site intracranial human brain activity”, *Nature Biotechnology* (2018). (\*: equal contribution, †: co-senior authors)
- 2018 V. R. Rao\*, K. K. Sellers\*, D. L. Wallace, M. B. Lee, M. Bijanzadeh, O. G. Sani, Y. Yang, M. M. Shanechi, H. E. Dawes, E. F. Chang, “Direct Electrical Stimulation of Lateral Orbitofrontal Cortex Acutely Improves Mood in Individuals with Symptoms of Depression”, *Current Biology* (2018). (\*: equal contribution)

## Conference Papers

- 2016 O. G. Sani, R. Chavarriaga, M. B. Shamsollahi, and J. d R. Millán, “Detection of movement related cortical potential: Effects of causal vs. non-causal processing”, in 2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2016, pp. 5733–5736.

## Conference Abstracts

- 2018 O. G. Sani, Y. Yang, M. B. Lee, H. Dawes, E. F. Chang, M. M. Shanechi, “Decoding mood state from multisite ECoG activity in human subjects”, in Computational and Systems Neuroscience (Cosyne), 1–4 Mar. 2018, Denver, Colorado.
- 2018 Y. Yang, O. G. Sani, K. K. Sellers, E. F. Chang, M. M. Shanechi, “A novel framework for dynamic modeling of brain-network response to electrical stimulation”, in Computational and Systems Neuroscience (Cosyne), 1–4 Mar. 2018, Denver, Colorado.
- 2017 O. G. Sani, Y. Yang, E. F. Chang, M. M. Shanechi, “Real-time decoding of mood from human large-scale ECoG activity”, in Annual Meeting, Society for Neuroscience (SfN), 11–15 Nov. 2017, Washington, DC.

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## Teaching Experience

- Fall 2013 to **Teaching Assistant**, *Sharif University of Technology*, EE Department.  
Spring 2015 MATLAB instructor for the “Digital Signal Processing” course - Instructed by: Dr. Shamsollahi

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## Coding Experience

Matlab, Octave, Python, Pascal, C++, PHP, JavaScript, HTML, CSS, L<sup>A</sup>T<sub>E</sub>X

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## Selected Projects

- 2018 **TweetAs** ([pleaselet.me/tweetas](http://pleaselet.me/tweetas)): Builds an n-gram language model from prior tweets of a twitter account and generates new tweets from the model.  
*Tech:* Backend: Python, MongoDB, deployed on Heroku. Frontend: Angular.
- 2018 **WeSay** ([pleaselet.me/wesay](http://pleaselet.me/wesay)): A social collaboration project where people vote on how to complete a sentence.  
*Tech:* Backend: Google cloud functions, Cloud Firestore database; Frontend: Angular.
- 2017 **Parrot Bot** ([telegram.me/parrrotbot](http://telegram.me/parrrotbot)): A Telegram bot that builds an n-gram language model from each person and imitates them.  
*Tech:* Python server, MongoDB, deployed on Heroku.
- 2017 **PackMan** ([github.com/OmidS/PackMan](http://github.com/OmidS/PackMan)): Package management for MATLAB.
- 2016 **Poem Bot** ([telegram.me/sherbot](http://telegram.me/sherbot)): A Telegram bot that serves Persian poems, plays recitation games, etc.  
*Tech:* Node.js server, SQLite, deployed on Heroku.
- 2015-present **20Q** ([20q.app](http://20q.app)): An online social 20 questions game.  
*Tech:* Backend: Node.js, loopback, MongoDB, GCM for push notifications, deployed on Heroku; Frontend: Angular, socket.io; Android: in development in collaboration with a friend.
- 2013 **QuickSSVEP** ([omids.github.io/quickssvep](http://omids.github.io/quickssvep)): A web based SSVEP stimulator.
- 2013 **Onlinify** ([github.com/OmidS/onlinify](http://github.com/OmidS/onlinify)): A MATLAB toolbox for online processing of EEG data recorded with BCI2000, transferred with Fieldtrip Buffer.
- 2013 **Ganjgah**: A local website for sharing course resources (not live anymore).  
*Tech:* Backend: PHP, MySQL; Frontend: HTML, JavaScript.

- 2012 **X86 based multiplayer game with ARM based connectivity node**, *GUI on clients and game logic on server; all connected through an ARM based hub board*, For Microprocessor System Design Course, Instructed by Dr. Sanaei.
- 2011 **Firefighter robot with wireless controller**, *8051 chip on robot and AVR on controller. Infrared based auto fire detection and approaching and water extinguishing*, For Computer Structure and Microprocessors Course, Instructed by Dr. Sanaei.

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## English Language Proficiency

TOEFL **Internet based TOEFL score: 114/120.**

Reading: 30/30; Listening: 30/30; Speaking: 27/30; Writing skills: 27/30.

GRE **GRE General Test:.**

Verbal: 156 (% Below: 69); Quantitative: 169 (% Below: 98); Writing: 4.5 (% Below: 73).

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## Honors

- August 2013 Admitted to Sharif University of Technology MSc program as an Exceptional Talent
- July 2009 Ranked 61<sup>st</sup> in the Nationwide Mathematics and Physics University Entrance Exam (among more than 270,000 contestants in the country)
- 2009–2015 Fellowship at National Foundation of Elites (<http://bmn.ir>)
- 2005 Accepted in the NODET high school entrance examination
- 2001 Accepted in the NODET middle school entrance examination

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## Membership

- 2010–2012 Member of the **Resana Student Union** council, Sharif University of Technology
- 2009–2015 Member of Exceptional Talents Community of Sharif University of Technology

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## Hobbies

Web Programming, Reading, Movies, Video Editing and Visual Effects, Swimming

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## References

- PhD Adviser Professor Maryam M. Shanechi (<http://nseip.usc.edu>)
- MSc Adviser Professor Mohammad Bagher Shamsollahi (<http://sharif.edu/~mbshams>)
- CNBI PI Professor José del R. Millán (<http://people.epfl.ch/jose.millan>)