

## Vandad Davoodnia

Sharif University of Technology (SUT)

Email: Vandad.Davoodnia@gmail.com

Phone: +98 936 694 6419

---

**EDUCATION**      *Bachelor of Science, Electrical Engineering*      2012-2017  
Sharif University of Technology, Tehran, Iran  
Major: Electronic and Electrical Engineering (Bioelectric)  
Current GPA: 3.03/4 (15.41/20) via 120 credits

*Diploma in Mathematics and Physics*      2008-2012  
Salam Sadeghie High School, Tehran, Iran  
GPA: 19.36/20

**RESEARCH INTEREST**      Neural Engineering, BCI, Neuroimaging, Neural Signal processing, Tangible Reality and Virtual Reality

**RESEARCH EXPERIENCE**      *Research Assistant*      Spring 2016 - Present  
Institute for Research in Fundamental Sciences (IPM), Brain Engineering Research Center  
Research Advisor: Dr. Reza Lashgari

- Developing of real time experimental control system.
- Modeling and analyzing the relation between single unit and LFP response properties in different layers of visual cortex V1 of primate.
- Developed an iOS and Android App for a visual monitoring system with collaboration of Dr. Jose Manual Alonso, SUNY(USA).

*Research Assistant*      Spring 2015 - Spring 2016  
Institute for Research in Fundamental Sciences (IPM), School of Cognitive Sciences  
Research Advisor: Dr. Reza Lashgari

- LFP signal Modeling and Clustering within different layers of visual cortex V1 of primate.
- Non-linear properties of SUA and LFP.
- Developed Eye Speed App for Android and iOS to develop new tests that can be used to monitor the progression of a visual disease.

*Research Assistant*      Fall 2014 - Spring 2015  
Iran University of Science and Technology (IUST), Lashgari Lab  
Research Advisor: Dr. Reza Lashgari

- Image segmentation in MR pictures
- 3D anatomical modeling of the primate brain for visualization purposes

**TEACHING EXPERIENCE**      *Teaching Assistant*      Fall 2015  
Fundamental of Neuroscience, Dr. Reza Lashgari,  
Department of Physics, Sharif University of Technology

- Planned and Graded final course projects for class of 40 students.
- Thought basics of neural coding.

**LABORATORIES SKILLS**      Assisted in macaque training for attention tasks  
Assisted in Electro-physiological lab setup for recording MUA and LFP activity  
Assisted in implementing a real time experimental control system for controlling behavioral responses

## COMPUTER SKILLS

- *Programming:* MATLAB, C/C++/C# (SDL, GTK+, OpenCV, Hardware Programming, GLUT/OpenGL, VTK, .Net, SQLite, Kinect, SQL Server), Objective-C (iOS, OS X), GISDK (Transcad), JAVA (Android, Window Builder, OpenGL), Action Script 2.0, Python
- *Biomedical Image Processing Softwares:* 3D-Slicer, Mango
- *PCB and Electronic Designs:* Altium, OrcadPSPICE (P Spice, HSpice), Proteus, Cadsoft Eagle
- *Type Casting:* L<sup>A</sup>T<sub>E</sub>X, Microsoft Office
- *Web Designing:* HTML, CSS, PHP, Java Script, Visual Basic Script, SQL
- *Graphical and Designing Tools:* Autodesk AutoCAD, CorelDRAW, 3D Unity, Autodesk 3DMax

## HONORS AND AWARDS

- Ranked 4th in Nationwide University Entrance Exam (Concours) 2012
- Passed the First Round of Iranian National Chemistry Olympiad FEB 2011
- Passed the First Round of Iranian National Computer Olympiad FEB 2011
- Passed the First Round of Iranian National Mathematics Olympiad FEB 2011
- Passed the First Round of Iranian National Astronomy Olympiad FEB 2011
- Passed the First Round of Iranian Computer Skills Competition FEB 2011

## PUBLICATIONS

- Zhao, L., Sendek, C., **Davoodnia, V.**, Lashgari, R., Dul, MW., Zaidi, Q., Alonso, JM. "Effect of age and glaucoma on the detection of darks and lights. IOVS Journal. 2015 Oct 1; 56 (11):7000-6 Oct 2015
- **Davoodnia, V.**, Lashgari, R., Alonso, J.M. "Published an android and iOS mobile app in Google Play and Apple Store as "EYE SPEED" to measure the reaction time of visual system. Oct 2015

## ABSTRACTS CONFERENCES

- Alikhani M, Rahimabadi A, Rahimi Nasrabadi H, Zangane M, **Davodnia V**, Lashgari, R. Neural adaptation in primary visual cortex of awake primates . Chicago, IL: Society for Neuroscience 2015
- Rahimabadi A, Alikhani M, **Davodnia V**, Zangane M, Rahimi Nasrabadi H, Lashgari, R. Method for analyzing neuronal response variability based on frequency response amplitude. Chicago, IL: Society for Neuroscience, 2015

## SELECTED ACADEMIC PROJECTS

- Dr. Fardmanesh, Application of Electronic Circuits in Biomedical Engineering course  
Designed and implemented a Neural Recording System by using Instrumental Amplifier Spring 2016
- Dr. Hajipour, Computational Intelligence course  
Implemented a NN Program for BCI2003 competition in MATLAB Spring 2016
- Dr. Farhadi, Linear Control course  
Designed a linear control system in MATLAB for controlling a non-linear system Spring 2016
- Dr. Haj Sadeqi, Microprocessor Systems course  
Designed and programmed a Touch Scientific Calculator by Arduino UNO Fall 2015
- Programmed a N-Dimension Cellular Automata interface for Advanced Programming course project in C Fall 2015
- Dr. Tabande, Computer and Microprocessor Structure course  
Designed and Built a Fire-Fighter robot with a group of students by ATmega32 Fall 2014
- Dr. Sarvari, Principle of Electronics course  
Designed and implemented a BJT audio amplifier Fall 2014
- Dr. Mahiar, Operation Systems course  
Developed and Programmed a Linux shell in C Spring 2014
- Dr. Safar Nezhad, Fundamentals of Programming C course  
Developed and Programmed a 2D Football game FALL 2012

EXTRA  
CURRICULAR  
ACTIVITIES

- Designed, Programmed and Implemented a Computer-Robot interface for object recognition and tracking by a WiFi Module and OpenCV For "Sharif Cup Competition" Summer 2014
- Programmed a Circuit Simulator Program in MATLAB Spring 2014
- Programmed an Add-in in Transcad/GISDK for Iran rail network simulation 2013 - 2014
- Programmed an Add-in in Transcad/GISDK for Iran transit road simulation 2012 - 2013
- Built a Path-Tracker Robot for "Sharif Cup Competition" Summer 2013
- Designed and Programmed a billiard game in C using SDL Library Fall 2013
- Programmed more than 20 Applications/Games/Simulation Programs during BSc as a freelance programmer 2012 - 2017
- Worked as a private teacher 2011-2013

RELATED  
COURSES

- Neural Modeling Fall 2016
- Ultra Sound Imaging Fall 2016
- Applications of Electronic Circuits in Biomedical Engineering Spring 2016
- Computational Intelligence Spring 2016
- Principle of Biomedical Engineering Fall 2015
- Microprocessor Systems Fall 2015
- Physiology Fall 2016
- Biosensors Spring 2015
- Operation Systems Fall 2014
- Computer Structure and Microprocessor Fall 2014

MEMBERSHIPS

- Student Member of IEEE.

LANGUAGE

- English: Fluent (TOEFL Exam due to 16 OCT)
- Farsi: Native