

# Zahra Nasr

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## Education

2016–2020	B.Sc. in Bio-electrical Engineering, University of Isfahan	GPA: 18.04/20.0 (3.84/4.0)
2012–2016	Diploma in Math, Farzaneganeamin High school (NODET)	GPA: 19.46/20.0

## Research Interests

- Wearable and Sensor Computing
- Applied Machine learning in Health Applications
- Video Game Rehabilitation

## Publications

- “Designing and Developing Four Games for Rehabilitation of the Wrist Complex and Forearm Complex: An Action Research” Moradi-Shahrbabak Z, **Nasr-Esfahani Z**, Garousi H, Rezaeian ZS. J Res Rehabil Sci 2020; 15(6): 319-26" CGCO (2020).
- “Prosthesis control using undersampled surface electromyographic signals" Hamid Reza Marateb, Mohammad Reza Mohebbian, Farzad Ziaie Nezhad, Marjan Nosouhi, **Zahra Nasr Esfahani**, Farzaneh Fazilati, Fatemeh Yusefi, Golnaz Amiri, Negar Malekifar, Mohsen Rastegari, Mislav Jordanic, Joan Francesc Alonso, Marjan Mansourian, Khan A. Wahid, and Miguel Ángel Mañanas. Book. **CRC Press Book** (2021).

## Research Experience

- **Spring 2021 - Present:** Research Intern at Behyaar, Isfahan : Working on improving PET image reconstruction.
- **Summer 2020:** Intern at PEDRA, Isfahan: Designed test procedures of laparoscopic cameras.
- **Summer 2019:** Intern at Video Game Developing Center, Isfahan: Developed two rehabilitation games.

## Awards and Honors

- Top 4 among 60 students in Bio-electrical engineering, University of Isfahan, 2020
- Granted merit-based admission to masters program in Bio-electrical at engineering department of University of Isfahan, 2020

## Projects

- Verification of Laparoscopic Cameras, **Internship Project**, Summer 2020  
Extracting relevant factors from ISO and IEC standards for designing test procedures laparoscopic cameras verification .
- Processing of Aliased Multi-Channel Surface Electromyographic Signals Recorded by Myo-Arm Band, **B.Sc. Thesis**, 2020  
Recording sEMG signal using Myo-Arm Band, statistical analyse of EMG data using *MedCalc*, and hand gesture recognition using machine learning in *MATLAB*.
- Video game design for rehabilitation using LeapMotion sensor, **Internship Project**, Summer 2019  
Developing hand rehabilitation games using *Unity*

- **Selected Class Projects:**

- Health Information System Design based on Client-Server Networks  
Designing telecommunication software between patient and physician using C#.
- Biological signal recording and processing using *ADInstruments systems* and *MATLAB*
  - \* Auto detection of QRS complex from recorded ECG signals.
  - \* Analysing alpha wave in recorded EEG signals.

## Workshops

- Therapeutic Game Workshop Series(held by Video Game Developing Center, University of Isfahan), *Summer 2019*
- Virtual BCI Neurotechnology Spring School (held by g.tec medical engineering GmbH), *April 2021*

## Conferences

- The 5th International Conference on Computer Games; Challenges and Opportunities (Therapeutic Games), University of Isfahan Center of Entertainment Industry, Isfahan, Iran, *February 2020*
  - Collaborated as one of the executive committee members
  - Presentation: Moradi-Shahrbabak Z, **Nasr-Esfahani Z**, Garousi H, Rezaeian ZS. Designing and Developing Four Games for Rehabilitation of the Wrist Complex and Forearm Complex: An Action Research

## Software Engineering Skills

- **Programming Languages**  
*Python, C#, C/C++, AVR, Matlab*
- **Machine Learning Frameworks**  
*Matlab*
- **Simulators**  
*Matlab Simulink, Proteus, PSpice, PSim*
- **Statistical Analyser**  
*SPSS, MedCalc*
- **Game Development**  
*Unity*
- **Laboratory**  
*ADInstruments systems for recording biological signals*

## References

References provided upon request.