

Curriculum Vitae

Farhad Tabatabai

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Farhad Tabatabai

- **Date of Birth:** August 2, 1972
- **Marital Status:** married - One child

Education

- 1998-2004 • **PhD in Biomedical Eng.**, AmirKabir University of Technology, Tehran, Iran, Average Grades %95.16, **Thesis Subject:** Virtual Heart
- 1995-1998 • **M.Sc. in Biomedical Eng. (Biomechanics)**, AmirKabir University of Technology, Tehran, Iran, Average Grades %85.9, **Thesis Title:** Modelling the Pharmacodynamic Systems Modelling Utilizing Bondgraph Technology
- 1991-1995 • **B.Sc. in Mechanical Eng.**, Department of Engineering, Ferdosi Mashhad University, Mashhad, Iran, Average Grades %81.25, **Thesis Title:** Psychometric chart, new approaches to on air conditioning and industrial products (in health care environment)

Research Interests

- Human Stability (Ankle Oscillations on Gait, Nonlinear analysis COP deviation on Posture, and Spine tilts on wobble chair)
- Biomechanics and Motor Control in Human Gait,
- Effect of Shoe parameters (such as Rocker, Inshoe, High Heel, and Frictions) on Knee, Ankle, and Foot Joints and Muscles,
- Mathematical Modeling of Physiological Systems. (Heart Electromechanical Behaviors, Muscle and Tendon Modeling)

Honors and Awards

- 2008 ▪ USWR Research Awards (2nd) from 140 Professors
- 2003 ▪ First Alumnus PhD on Biomechanics Eng in Iran

- 2003 ▪ Honor PhD student, ranked 1st with GPA 19.03 / 20
- 2000 ▪ Best Paper on First Iranian Student Conferences on Biomedical Engineering, Tehran, Iran, 5-7 Oct, 2000.
- 1998 ▪ Ranked 1st in Ph.D. entrance exam among 17 participants.
- 1998 ▪ Honor MSc student, ranked 3rd with GPA 17.41 / 20
- 1995 ▪ Ranked 41st in M.Sc. entrance exam among 12000 participants.
- 1995 ▪ Honor MSc student, ranked 2nd with GPA 16.25 / 20

Academic Responsibilities, Memberships and Affiliation

Directors of undergraduate students in biomedical department,
Personal tutor: Graduate School, Department of Orthotics and Prosthetics

- 2009-
Present • **Assistant Professor in Department of Biomedical Engineering, AmirKabir University of Technology, (Tehran Polytechnic), Tehran, Iran.**
Motor Control (TA), Dynamical Analysis of Human Motion, Kinesiology, Human Factors Engineering, Introduction to Rehabilitation and Assistive Devices, Statics, Introduction to Biomedical Engineering,
- 2004-
Present • **Assistant Professor in Department of Orthotics and Prosthetics, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.**
Design and Application of New Prosthetics, Applications of Movement and Sense Measurement Instrument on Artificial Limb and Assistive devices, Artificial Intelligent Joint, Clinical Biomechanics, Control of Prosthetics Systems, Myoelectrical Prosthetics, Strength of Materials, Introduction to Electrical Circuits, Properties of Materials (metals and polymers), and Physics.
- 2004-
Present • **Assistant Professor in Department of Biomedical Engineering, Branch of Research and Sciences, Islamic Azad University, Tehran, Iran.**
Robotics, Numerical Computations, Dynamic of Machinery, Statics, Dynamics, Biomechanics and Kinesiology, and Physics.
- 2004-
Present • **Member of Iranian Society of Biomedical Engineering**

R&D Projects

I have gained an insight into various stages of research from taking an idea to preparation of a grant proposal, defending the proposal, and managing the human resources and finances and preparing reports for various stages and bringing the project to its conclusion. Some of the projects that I have been involved with are listed below:

- 2004-2006 • **Designing the prototype educational set of myoelectric hand prosthesis.** Ministry Of Health and Medical Education, Research Grant equivalent to \$ 32,000 USD
- 1999-2003 • **Designing the prototype of a mechatronic system for evaluation of hand neuromuscular systems.** The Ministry of Science Research and Technology, Research Grant equivalent to \$ 24,000 USD

Selected Publications

I. Books and Book Chapters

- 1- Shamsi F., Tabatabai F., ***Lower Limb Prosthesis***, University of Social Welfare and Rehabilitation Sciences, winter 2009.
- 2- Tabatabai F., Sanei A., ***An Introduction to Biomedical Engineering (Vol II: Biomechanics)***, Islamic Azad University Publication, Branch of Research and Sciences, Spring 2009.
- 3- ***Biomechanics and Motor Control of Human Movement, 4th ed, (by David Winter)***, (Translated into farsi), Translators: Najarian S., Tabatabai F., Aslian H, Sanei A., AmirKabir University of Technology (Tehran Polytechnic) Publication, under publication
- 4- ***Biomechanics in the Musculoskeletal System, 1st ed, (by Manohar M. Panjabi, Augustus A. White)***, (Translated into farsi), Translators: Tabatabai F., et al., Sharif University Press, 2010.

II. International Journals

- 5- Khosroshahi M. E., Nourbakhsh M. S., Saremi S. and Tabatabae F., ***Characterization of skin tissue soldering using diode laser and indocyanine green: in vitro studies***, Lasers in Medical Science, 25:207–212, 2010.
- 6- Javad Dargahi, Saeed Sokhanvar, Siamak Najarian and Farhad Tabatabai, ***A Novel Teletaction Control System for Detection of Human Pulse Wave with Applications in Teleoperations***, American Journal of Applied Sciences, Vol. 5, No. 6, pp 665-674, 2008.
- 7- Ali Abouei Mehrizi, Siamak Najarian, Majid Moini and Farhad Tabatabai, ***Tactile Distinction of an Artery and a Tumor in a Soft Tissue by Finite Element Method***, American Journal of Applied Sciences, Vol. 5, No. 2, pp 83-88, 2008.
- 8- F. Tabatabai, A. R. Arshi, A. N. Dehdashti, ***Spatiotemporal Wavefront Propagation in 3D Geometric Excitable Ischemia Heart Model***, International Journal of Scientific Research, Vol. 16, pp 357-361, 2006.

III. National Journals

- 9- F. Tabatabai, A. Ghochani, S. Najarian, ***Effect of Patterns of foot and leg linear and rotational forces and analysis of torques and forces applied on limbs and joints of lower extremities in free kick in football***, AmirKabir Journal (submitted).
- 10- M. S. Nourbakhsh, Khosroshahi M. E., Saremi S., Sh. Rabani, A. H. Ahmadi, F. Tabatabai, and P. Salehian, ***Characterization of rat skin tissue soldering using Automated feedback diode laser***, Iranian Journal of Medical Physics, Vol. 6(1), No. 22, PP:61–69, 2009.
- 11- Fallahian N., F. Tabatabai, M. Rahgozar, R. V. Kashani, M. BahramiZadeh, ***Validation of a Device for Registering Orthotic Wearing Time during the Laboratory Climate Tests on Normal Volunteers***, Vol. 1, No. 1, pp 65-74, 2008. (in person)
- 12- F. Tabatabai, M. E. Mousavi, R. V. Kashani, A. S. Jafarpishe, A. T. Nasr, ***Designing and Manufacturing an electrical control System for Myoelectric Pransradial Prosthesis***, journal of Rehabilitation, Vol. 1, No. 25, pp 12-18, 2006. (in person)

IV. International Conferences

- 13- F. Tabatabai, Sh. Sabokdast, ***The Role of Mental Consciousness on Making Decisions in Vulnerable Actions***, ***ICMISC 2010: International Conference on Medical Image and Signal Computing***. Rome, April 2010,
- 14- F. Tabatabai, Sh. Sabokdast, ***Essential Criterion in Determining Basic Parameters for One-side-knee Amputate Individuals Walking Aiming Control Signal Generation of Knee Intelligent Prostheses***, International Conference on Biological and Medical Sciences. Tokyo, May 2010, (Accepted)
- 15- Sh. Sabokdast, F. Tabatabai, ***The Effect of Plantar Sensors on Body Stability***, National Conference of Electronic Health and Applications of ICT in Medicine, Tehran, Iran, February 2010.
- 16- Sh. Sabokdast, F. Tabatabai, ***Designing Healing Orthoses for Ligament/Tendon Injuries***, ***Cairo, Egypt, Dec 2010***, 5th Cairo International Biomedical Engineering Conference (CIBEC 2010). (Submitted)
- 17- A. Kian, F. Tabatabai, A. R. Arshi, Z. Norang, ***Calculating Forces and Momentums of Elbow and Shoulder Joints of the Bow Arm in Elite and Beginner Compound Archers at Full Draw Position***, Austria, July 12th to 16th 2010 ISEA Conference (abstract accepted, full text submitted).
- 18- Z. Norang, F. Tabatabai, A. Kian, H. Nabavi, ***Comparison of Ankle Dynamic Stability in Beginner and Sub Elite Sprinters during Takeoff in Vertical Jumps***, Edinburgh Scotland, UK. July 5th to 8th 2010, ESB2010 Congress (accepted for a poster presentation).
- 19- M. Ghofrani, F. Tabatabai, ***Investigating the effect of speed on the moment acting on the Spine during Loading & unloading by utilizing Motion Analysis System, Upward and Downward Computations***, Vancouver, November 12-18, 2010, "International Mechanical Engineering Congress and Exposition". IMECE2010, ASME (Submitted)
- 20- S.K. Rezvaninejad, F. Tabatabaei, A. Ghochani, M. Rahimnejad, ***Effect of foot and leg linear and rotational forces and analysis of torques and forces applied on limbs and joints of lower extremities in free kick in football***, Austria, July 12th to 16th 2010 ISEA Conference (abstract accepted, full text submitted).
- 21- S. Shaghaghi, E. karimi, F. Tabatabai, ***Investigation of spread of foot deformity by using digital podoscope device***, 2nd Congress of the International Foot and Ankle Biomechanics Community, University of Washington, Seattle, USA (i-FAB 2010), September 16-18, 2010
- 22- Nourbakhsh M. S., Khosroshahi M. E., Saremi S. and Tabatabaee F., ***Effects of Static and Dynamic Modes on Laser Tissue Soldering: An In-vitro Study***, IFMBE Proceedings, 14th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics, Riga, Latvia, pp. 383–385, June, 2008.
- 23- M. S. Shourijeh, F. Tabatabai, A. R. Arshi, ***A New Model to Investigate Effects of Adding Flexor and Extensor Elements on Ankle Joint Vertical Contact Force during Human Normal Gait***, Human Biomechanics. Prague: Czech Technical University in Prague, September 29-30, 2008.
- 24- Tabatabai F., Tehrani Nasr A., ***Analyzing of Human Motion Lower Extremity Utilizing Bondgraph Technology***, ***Sixth International Conferences on Gait and Mental Function***, Madrid, Spain, 2005.
- 25- F. Tabatabai, A. R. Arshi, M. Mahmoudian, M. Janahmadi, ***Spatiotemporal Wavefront Propagation in 3D Geometric Excitable Heart Tissue utilizing Bond Graph Modelling Technique***, 7th International Conference of Bond Graph Modeling, New Orleans, 2005.
- 26- Tabatabai F., Arshi A. R., Mahmoudian M., Janahmadi M., ***3D Combined electrochemical path (CEP 2.05) model of the heart***, Sixth International Symposium on Computer Methods in Biomechanics & Biomedical Engineering, Tryp Atocha Hotel, Madrid, Spain, Feb 25-28, 2004.
- 27- Arshi A. R., Mahmoudian M., Tabatabaie F. G., ***Bond Graph Modeling of Pharmacodynamic Effect of Group IA Anti-arrhythmia Drugs on Ventricular Purkinje Cell Membrane Ionic Channels***, 5th International Conference of Bond Graph Modeling, Phoenix Arizona, PP. 322-327, 2001.

28- Arshi A. R., Tabatabai F., Arian M., Zare S., Deldari A., Rahmati A. K., *Qualitative Reasoning in Muscles Qualitative Modelling*, International Conference of Cognitive Science, PP. 83-84, Tehran, Iran, February 2001. (in Persian)

Skills and Experiences

Getting familiar with the biomechanical testing instruments:

- Motion Analysis System (VICON®)
- Force Plate (KISTTLER®)
- Electromyography (EMG)

<i>Computation Experience</i>	<i>Software</i>	<i>Skills Level</i>
General Computation	MATLAB computation and programming	Moderate
Mechanical Analysis	MDSolids 3.2	Moderate
Draft Preparation and Type	Microsoft Word 2007	Advanced
	Adobe Acrobat 9.0	Advanced
Presentation	Microsoft Power Point 2007	Advanced
Data Preparation	Microsoft Excell 2007	Advanced

For updates please refer to Web:

<http://www.aut.ac.ir/official/main.asp?uid=tabatabai>