

Robert Thomas Fekete PhD

Industrial Design Engineering and Psychology

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EDUCATION

- 2011 - 2014 B.A. degree in Behavioural Analyst Psychologist (Károli Gáspár University of the Reformed Church in Hungary, Budapest) No: PTE054724
- 2006 - 2009 PhD degree in Mechanical Engineering Sciences (Budapest University of Technology and Economics, Department of Mechatronics, Optics and Mechanical Engineering Informatics, Hungary) No: 1994-PhD
- 2000 - 2005 M.Sc. degree in Industrial Design Engineering (Budapest University of Technology and Economics, Faculty of Mechanical Engineering, Hungary) No: PTG001018

EMPLOYMENT

- 2009 - Current full-time job, Senior Assistant Professor – Budapest University of Technology and Economics, Faculty of Mechanical Engineering, Department of Mechatronics, Optics and Mechanical Engineering Informatics
- 2014 - CEO and Development Engineer – Innoco Innovational Organization Development and Consulting Ltd.
- 2006 - 2008 Development Engineer – Garpex Engineering Ltd.
- 2005 - 2006 Development Engineer – Cytotech Medical Device Development Ltd.
- 2000 - 2001 Building Engineer Assistant – Hopferwieser Building Engineering Ltd.
- 1999 - 2000 Building Engineer Assistant – Air Service Ventilation Technic Ltd.

TEACHING INTERESTS AND EXPERIENCE

- 2013 - Measurement Technology and Statistics (Lectures and Labs)
- 2014 - Bioengineering Modelling and Simulation
- 2013 - Elements of the Intelligent Machines (Systems and Artificial Intelligence, Sensors and Actuators) (Lectures)
- 2012 - Visualizing and Presentation Technics (Lectures and Labs) (in every semester)
- 2008 - 3D Modelling and Animation; Graphics and Publication Design (Lectures and Labs)
- 2007 - Applied Engineering Informatics (C++ and C# Programming) (Lectures and Labs)
- 2007 - 2009 Lighting and Colour Technology (Lectures and Labs)
- 2005 - 2014 CAD Systems (CAD, CAM and FEM Systems) (Labs)

RESEARCH INTERESTS AND EXPERIENCE

- 2005 - Interdisciplinary Engineering and Psychology
- 2013 - Social-robotics, Affective Computing, Etho-robotics, Affective-behavioural Modelling and Simulation
- 2008 - Non-invasive Blood Glucose Estimation, Pupillometry
- 2007 - Computerized Psychophysical Measurement
- 2005 - 2009 Transportation Indicators
- 2004 - Human-Machine-Environment Systems, Ergonomics

REFERENCE WORKS AND RESEARCHES

- 2015 Development of consensual pupillometry equipment (Measurement of direct and consensual light reflex; consensual pupillometry for robotic emotional recognition)
- 2015 Development of autonomous explorer mobile robot for a specified environment
- 2014 Development of precision mechanical equipment for retina mounting (ind. ord.)
- 2013 Design of a new menu system for VIRCA virtual collaboration system
- 2012 Development of control software for a windscreen production line (ind. ord.)
- 2011 System analysis of mechatronic equipment of an automated storey car park (ind. ord.)
- 2011 Development of analyser software for curve evaluation in automotive industry (ind. ord.)
- 2010 3D reconstruction system for autonomous robot navigation

- 2008 Integrated human-machine-environment system model of proportional stop lamps in braking situations
- 2007 Hart rate variability (HRV) measurement procedure design for psychological experiments
- 2007 Proportional vehicular displays development and analysis
- 2007 Development of a measurement station and procedure for measuring differences between standard and proportional stop lamps
- 2006 Comparative analysis in reading techniques used in blood type serology (SSC)
- 2005 Development of a new ergonomic user interface for serology measuring robot (MSc d.)

PROFESSIONAL STRENGTHS

- Product development (industrial design engineering, teamwork and inventive technics, creative and demand induced design, problem solving and decision making, holistic thinking)
- Prototype making (manufacturing, practicality)
- CAE systems and design (Solid Works, AnSYS, etc.)
- Programming (C#, LabVIEW, etc.)
- Psychology and Ergonomics (interdisciplinary thinking and engineering, user interface and user catered design, usage analysis)
- Fast learning ability and adaptability

SELECTED HONOURS AND AWARDS

- 2015 Certificate of Scientific Student Conference (Erorobotics behavioural engine development)
- 2014 Certificate of FESTO E311 course in control technics and programming controllers
- 2014 Certificate of Scientific Student Conference (Blood glucose monitoring system)
- 2013 Certificate from National Instruments for successfully completed LabVIEW courses
- 2013 Qualification of University Green Department Competition first place
- 2011 Certification in occupational safety education from the Applied Pedagogy and Psychology Institute
- 2011 Certificate of Scientific Student Conference (Autonomous exploratory robot development)
- 2010 Certificate of Dean's praise for works for the Faculty of Mechanical Engineering
- 2010 Certificate of Scientific Student Conference (3D space reconstruction methods)
- 2010 Certificate of Scientific Student Conference (Autonomous one-wheel robot development)
- 2009 Certificate of Scientific Student Conference (Autonomous exploratory robots)
- 2009 Certificate of Scientific Student Conference (Mechatronic driver chair development for simulation)
- 2008 Siemens Excellence Award: PhD dissertation, Effect analysis of proportional brake lights
- 2007 Doctoral candidate scholarship for one year at the Budapest University of Technology and Economics
- 2007 Scholarship of German Language Development in Ilmenau
- 2006 Certificate of Scientific Student Conference 1st place (Blood type serology)

PROFESSIONAL MEMBERSHIPS

- 2015 - Unified Psychological Research Ethics Committee of Hungary, member
- 2014 - International Commission on Illumination CIE, Division of Image Technology, member

COMPUTER SKILLS

- General Informatics, Systems: advanced level (e.g. Windows, Linux)
- CAE, CAD and CAM Systems: advanced level (e.g. AutoCAD, SolidEdge, SolidWorks, Cosmos, AnSYS, etc.)
- Office and Presentation Syst.: advanced level (e.g. Word, Excel, P.Point, Access, Prezi, etc.)
- Graphics Systems: upper-intermediate level (e.g. Photoshop, InDesign, CorelDraw, Sony Vegas, etc.)
- Modelling Systems: upper-intermediate level (e.g. Blender, 3d Studio Max, etc.)
- Programming Languages: upper-intermediate level (e.g. C++, C#, Visual Basic, Delphi, Pascal, etc.)
- Eng. Simulation Systems: intermediate level (e.g. LabVIEW, Scilab, Matlab, etc.)
- Server Admin. Knowledge: pre-intermediate level (e.g. Windows Server, Google for Education)
- Web design Systems: pre-intermediate level (e.g. Dreamweaver, HTML, PHP, WordPress, etc.)

LANGUAGES

- English: intermediate, No: 712551 (advanced exam in August, 2016)
- Italian: elementary, No: 1094917
- Hungarian: native

SELECTED PUBLICATIONS**PATENT**

György Ábrahám, Róbert Tamás Fekete
Equipment for external display the status of vehicle movement via light signals
NSZO: B60Q 1/00, B60R 21/00, G09F 9/00; Registration number: 229790; Case number: P0700652
Year of submission: 2007; Year of disclosure: 2014; Place of submission: Hungary; (2007) Language: EN

BOOK

Róbert Fekete, Ákos Antal, Péter Tamás, Annamária Décsei-Paróczy
3D visualization technology (about 80 percentage of the book)
Budapest: BUTE, 2015. 342 p., ISBN: 978-963-313-200-5,
Language: HU (2015)

JOURNAL PAPERS

György Ábrahám, Róbert Tamás Fekete
Lighting of workstation in office environment
Optics Magazine, Year XIII; pp. 20-21., Language: HU (2009)

Antal Ákos, Fekete Róbert Tamás
Quasi interferometric shape detection of vehicle body parts
Vehicle of the Future: Transportation Innovations 3: (3-4) pp. 44-47.,
Language: HU (2008) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Integrated human-machine-environment system model of proportional stop lamps in braking situations
Periodica Polytechnica - Transportation Engineering 38: (1-2) pp. 47-50.,
Language: EN (2008) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Development of a measurement station and a procedure for measuring differences between standard and proportional stop lamps
Periodica Polytechnica - Transportation Engineering 36: (1-2) pp. 41-46.,
Language: EN (2008) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Long-term effect of proportional break lights
Vehicle of the Future: Transportation Innovations 3: (3-4) pp. 56-60.,
Language: HU (2008) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Effect analysis of proportional break lights
Vehicle of the Future: Transportation Innovations 3: (1-2) pp. 41-44.,
Language: HU (2008) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Measurement of effects of breaking level display on drivers
Technology Review (EMT) 38: pp. 106-109., Language: HU (2007)

Róbert Tamás Fekete
Proportional break lights, analysis of the effect on drivers
Technology Magazine 4: pp. 50-54., Language: HU (2007)

Róbert Tamás Fekete, György Ábrahám
Measurement technology of Complementary light signals
Vehicle of the Future: Transportation Innovations 2: (1-2) pp. 42-45.,
Language: HU (2007) (Peer-reviewed)

Róbert Tamás Fekete, György Ábrahám
Cooperative control of vehicles by light signals
Vehicle of the Future: Transportation Innovations 1: (1-2) pp. 68-70.,
Language: HU (2006) (Peer-reviewed)

Róbert Tamás Fekete
Evolution of assistant systems that support drivers
Hungarian Electronics 23: pp. 24-26., Language: HU (2006)

CONFERENCES

Róbert Tamás Fekete, Balázs Regele, Károly Csurrilla, Csongor Márk Horváth, Levente Raj
Development of Ethorobotics test environment
In: Dr Csibi Vencel-József (editor), OGET 2016: 24th International Conference on Mechanical Engineering, 516 p. Place, date: Déva, Romania, 2016.04.21-2016.04.24. pp. 362-365. (24.), Language: HU (2016)

Róbert Tamás Fekete, Levente Raj
Blood glucose predictive and monitoring system
In: Dr Csibi Vencel-József (editor), OGET 2015: 23th International Conference on Mechanical Engineering, Place, date: Csíksomlyó, Romania, 2015.04.23-2015.04.26. pp. 97-100. (ISBN: 973-7840-03-8), Language: HU (2015)

Róbert Tamás Fekete, Krisztián Samu, Levente Raj, Ágnes Urbin
Measurement of direct and consensual light reflex
In: Peter Zwick (editor), Proceedings of the 28th Session of CIE - Vol.1. Place, date: Manchester, England, 2015.06.28-2015.07.04. Wien: International Commission on Illumination (CIE), 2015. p. 1021. 5 p. (ISBN: 978-3-902842-55-8), Language: EN (2015)

Róbert Tamás Fekete, Levente Raj, Anna Horváth
Measurement of direct and consensual pupillary light reflexes
In: Dr Csibi Vencel-József (editor), OGET 2014: 22th International Conference on Mechanical Engineering, Place, date: Nagyszeben, Romania, 2014.04.24-2014.04.27. pp. 115-118. , Language: HU (2014)

Róbert Tamás Fekete, Levente Raj, Anna Horváth
Opportunities of affective recognition via pupillometry tools
In: Workshop on Cognitive and Etho-Robotics in iSpace (CERiS'14). Place, date: Budapest, Hungary, 2014.03.18-2014.03.19. pp. 1-4. , Language: HU (2014)

Róbert Tamás Fekete, Levente Raj, Anna Horváth
Natural and artificial attachment at healthcare robots
In: Péter Korondi (editor), Proceedings of ARES'14: Workshop on Application of Robotics for Enhanced Security. Place, date: Budapest, Hungary, 2014.06.13-2014.06.14. Budapest: BUTE, 2014. pp. 1-9. (ISBN: 978-963-313-128-2), Language: HU (2014)

Klára Wenzel, Ágnes Urbin, Róbert Tamás Fekete
Investigation of colour visualization CRT monitors
In: Lux et Color Vespremiensis 2014. Place, date: Veszprém; Budapest; Győr, Magyarország, 2014.11.13pp. 1-4., Language: HU (2014)

Róbert Tamás Fekete, Levente Raj, Viktor Devecseri
Attachment to natural and artificial entities in older age
In: Korondi Péter (editor), Proceedings of CERiS'13 - Workshop on Cognitive and Eto-Robotics in iSpace. 162 p. Place, date: Budapest, Magyarország, 2013.03.19-2013.03.20. Budapest: BUTE pp. P1-1-P1-5. (ISBN: 978-963-313-086-5), Language: EN (2013)

Levente Raj, Viktor Devecseri, Róbert Tamás Fekete
State Space Model of an Omni-directional Holonomic Mobile Robot
In: Grzegorz Kłapyta (editor), OWD 2013, XV International PhD Workshop. Place, date: Gliwice, Poland, 2013.10.19-2013.10.22. pp. 472-477. (ISBN: 978-83-935427-2-7), Language: EN (2013)

Viktor Devecseri, Levente Raj, Róbert Tamás Fekete
Comparison of different multiple camera calibration methods
In: Grzegorz Kłapyta (editor), OWD 2013, XV International PhD Workshop. Place, date: Gliwice, Poland, 2013.10.19-2013.10.22. pp. 298-301. (ISBN: 978-83-935427-2-7), Language: EN (2013)

Levente Raj, Róbert Tamás Fekete
Developing a robot solution for welding and grinding of turbines for hydroelectric power plants

In: Marcin Szczygiel (editor), OWD 2012, XIV International PhD Workshop. Wisla, Poland, Gliwice. Place, date: Wisla, Poland, 2012.10.20-2012.10.23. pp. 1-4.
(Conference Archives Pteis, 2012; 31.) (ISBN: 978-83-935427-0-3), Language: EN (2012)

Róbert Tamás Fekete, Csongor Horváth
Development of Autonomous Explorer Mobile Robot for a Specified Environment

In: Szakál Anikó (editor), Computational Intelligence and Informatics (CINTI), 2011 IEEE 12th International Symposium on. 601 p. Place, date: Budapest, Magyarország, 2011.11.21-2011.11.22. Piscataway: IEEE, 2011. Paper 95. (ISBN: 978-1-4577-0044-6), Language: EN (2011)

Róbert Tamás Fekete, Balázs Dániel, Levente Raj
Robotino in education

In: Marcin Szczygiel (editor), OWD 2011: XIII International PhD Workshop. Place, date: Wisla, Poland, 2011.11.16-2011.11.18. (IEEE) Gliwice: Organizing Committee of the Symposium PPEE & Seminar BSE, 2011. pp. 54-57. (ISBN: 83-922242-8-0), Language: EN (2011)

Róbert Tamás Fekete, Tamás Fazakas

3D Reconstruction System for Autonomous Robot Navigation
In: Szakál A (editor), 11th IEEE International Symposium on Computational Intelligence and Informatics CINTI 2010: Proceedings. 329 p. Place, date: Budapest, Magyarország, 2010.11.18-2010.11.20. pp. 267-270. (ISBN: 978-1-4244-9279-4; 978-1-4244-9280-0), Language: EN (2010)

Further publications

vm.mtmt.hu/www/index.php?AuthorID=10027614

PROFESSIONAL TRIPS

2016 Visiting professor at the Chuo University in Tokyo
2016 Visiting professor at the Arctic University of Norway
2007 German summer course in Ilmenau
2007 Polish summer university in Gliwice
2006 Polish summer university in Gliwice

INTERESTS AND HOBBIES

Psychology, Coaching, Informatics, Education, Management, Artificial intelligence, Green technologies
Travelling, Films, Sports, Music, Standard and Latin dance, Environmental protection, Volunteering

TOP MOTIVATION FACTORS

Creative and varied work, Teamwork, Life-long learning, Performance proportional payment
Responsibility and leader position, Opportunity of preferment, Project approach, Important contribution

INTERDISCIPLINARITY AND BALANCE

Engineering, Informatics – Psychology, Ergonomics – Leadership, Management
Team leader – Holistic team player – Extrovert industrious specialist

SOFT SKILLS

High: Coaching and Mentoring, Presentation and Teaching, Leadership and Management, Prioritization and Focus, Interdisciplinarity, Creative and Innovative thinking, Adaptability and Flexibility, Friendliness and Empathy, Positive and Optimistic Attitude, Operative and Practical thinking, Team worker and Cooperative attitude

Above the average: Problem solving and Decision making, Multi-tasking and Efficient, Negotiation and Reasoning, Critical and Analysing thinking, Ability to work under pressure

Low: Patience and long-suffering, Monotony tolerance, Work under authoritarian leader

Róbert Tamás Fekete, György Ábrahám
Communication of motion state of vehicles via colour signal lights
In: XXXI. Coloristic symposium, Place, date: Eger, Magyarország, 2007.05.07-2007.05.09. pp. 1-42. (ISBN: 978-963-9319-66-0), Language: HU (2007)

Róbert Tamás Fekete

Procedure for measuring differences between standard and proportional stop lamps
In: IX International PhD Workshop, OWD 2007, Conference Archives PTETiS. 203 p. Place, date: Wisla, Poland, 2007.10.20-2007.10.23., Conference Archives PTETiS (ISBN: 83-922242-2-1), Language: EN (2007)

Róbert Tamás Fekete, György Ábrahám

Way to the “intelligent” vehicles
In: ISSE 2006 conference. Place, date: St. Marienthal, Germany, 2006 (IEEE) [s. l]: [s. n.], 2006. p. 181. (ISBN: 1-4244-0551-3), Language: EN (2006)

Róbert Tamás Fekete

Light sign based cooperative control of vehicles
In: OWD 2006 Conference. Place, date: Wisla, Poland, 2006.10 Gliwice: [s. n.], 2006. pp. 137-140. (ISBN: 83-922242-1-3), Language: EN (2006)

REFERENCES

All referees are with Department of Mechatronics, Optics and Mechanical Engineering Informatics, Faculty of Mechanical Engineering, Budapest University of Technology and Economics, 4-6. Bertalan Lajos Street, Budapest, 1111 Hungary

Antal HUBA, PhD, professor; Phone: +36 20 952 2948, Email: huba@mogi.bme.hu;

Relationship: Former Deputy Head of Department, general contact

Profile: <http://www.mogi.bme.hu/?p=staffandshow=21andlang=en>

Publications: <https://vm.mtmt.hu/search/slist.php?lang=1andAuthorID=10041701>

György ÁBRAHÁM, PhD, DSc, professor; Phone: +36 30 942 1626, Email: abra@mogi.bme.hu

Relationship: PhD supervisor, Former Head of Department

Profile: <http://www.mogi.bme.hu/?p=staffandshow=3andlang=en>

Publications: <https://vm.mtmt.hu/search/slist.php?lang=1andAuthorID=10001386>

Attila HALMAI, PhD, DSc, professor; Phone: +36 1 463 2603, Email: halmi@mogi.bme.hu

Relationship: Former Head of Department

Profile: <http://www.mogi.bme.hu/?p=staffandshow=19andlang=en>

Publications: <https://vm.mtmt.hu/search/slist.php?lang=1andAuthorID=10041702>

Krisztian SAMU, PhD, associated professor; Phone: +36 30 290 0712, Email: samuk@mogi.bme.hu

Relationship: Deputy Head of Department

Profile: <http://www.mogi.bme.hu/?p=staffandshow=31andlang=en>

Publications: <https://vm.mtmt.hu/search/slist.php?lang=1andAuthorID=10001999>

Klára WENZELNÉ, PhD, DSc, professor; Phone: +36 1 463 3792, Email: wenzel@mogi.bme.hu

Relationship: Field of Optics

Profile: <http://www.mogi.bme.hu/?p=staffandshow=46andlang=en>

Publications: <https://vm.mtmt.hu/search/slist.php?lang=1andAuthorID=10004235>