László A. Jeni

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Research Interests

Theory	Computer Vision: deformable model fitting, 3D reconstruction, Face alignment, Real-time methods Machine Learning: kernel methods and structured sparsity, Time-series analysis, Online learning, Performance metrics
Applications	Automatic coding of facial expressions (prototypical expressions, action unit detection, intensity estimation, eye-gaze estimation), Spatio-temporal event analysis, Human activity recognition,

Education

2008 – 2012	The University of Tokyo (Japan) Ph.D., Electrical Engineering and Information Systems Thesis: "Study on Facial Expression Analysis based on 3D Deformable Model"
2010 – 2011	RIKEN Brain Science Institute (Japan) Certificate in Neuroscience and Cognitive Neuroscience
1998 – 2004	Eötvös Loránd University, Faculty of Informatics (Hungary) M.Sc. in Computer Science Thesis: "Artificial Intelligence Techniques used in the Game of Go"
1993 – 1998	John von Neumann Secondary Vocational School for Computer Technology (Hungary) Computer Programmer (1997) Specialist in Geographical Information Systems (1998)

Appointments and Working Experience

2015 – current	Carnegie Mellon University (USA) Project Scientist at the Robotics Institute Working on dense, 3D metric reconstruction of deformable objects, 3D eye gaze estimation and automatic facial expression coding.
2012 – 2015	Carnegie Mellon University (USA) Postdoctoral Researcher at the Robotics Institute Working on 3D face alignment and automatic coding of facial expressions with Jeffrey F. Cohn and Takeo Kanade.
2011 – 2012	Realeyes OU Senior Computer Vision Specialist Working on scaling-up face-alignment and face-analysis techniques.
2007 – 2012	The University of Tokyo (Japan) Research Assistant, Global Center of Excellence Program "Secure-Life Electronics", Department of Electrical Engineering Working on real-time facial expression analysis and human-robot interaction in intelligent environments.
2007 – 2009	Triensis SRO (Slovakia) – startup Managing Director Developing and maintaining a multiplayer, online role-playing game. Leading and managing group of artist and content developers.

2006 – 2007	Eötvös Loránd University (Hungary) Junior Assistant Professor at the Department of Software Technology & Methodology Teaching Robotics, Multi-agent systems, Advanced 3D Computer Graphics and Managed DirectX/XNA
2005 – 2006	Eötvös Loránd University (Hungary) Lecturer at the Department of Media & Educational Technology Teaching 3D game programming, Real-time 3D graphics, Advanced Assembly programming
2003 – 2004	ArchiData Ltd. (Hungary) Software developer Developing the 3DClick architectural CAD software. DirectX API programming (texture mapping, shader programming), photo-rendering integration.

Awards & Scholarships

2015	Best Paper Award (IEEE FG 2015, Ljubljana, Slovenia) Paper: "Dense 3D Face Alignment from 2D Videos in Real-Time"
2015	Outstanding Reviewer Award (IEEE FG 2015, Ljubljana, Slovenia)
2011	Session Best Paper Award (IEEE HSI 2011, Yokohama) Paper: "Using Conditional Random Fields to Validate Observations…"
2010 – 2011	RIKEN Brain Science Training Program (Trainee) By: RIKEN Institute, Japan
2010	Machine Learning Summer School Scholarship (Canberra, Australia)
2007 – 2011	Japanese government scholarship (Monbukagakusho) By: Ministry of Education, Culture, Sports, Science and Technology, Japan
2006 – 2007	Scholarship of the Eötvös Loránd University, predoctorial appointment
2005	OTDK National Student Research Competition, 1st prize (Computer Graphics) By: Council of National Scientific Students' Associations Paper: "Real-time Dual-paraboloid Shadow Mapping"

Teaching Experience

Lecturing	**Eötvös Loránd University, Budapest, Hungary**
2007 Spring	Managed DirectX and XNA (ca. 25 graduate students)
2006F, 2007S	Multi-agent Systems (ca. 25 graduate students)
2006F, 2007S	Robotics (ca. 25 graduate students)
2006 Fall	Advanced 3D Computer Graphics (ca. 40 graduate students):
2005 Fall	3D Game Programming (ca. 30 graduate students):
2003-2006 S.	Advanced Assembly Programming (ca. 30 students):
2003-2006, S.	Real-time 3D Graphics (ca. 30 students):
2004-2006 S.	Fractal Geometry (ca. 20 students):
M.Sc. Supervision	**Eötvös Loránd University, Budapest, Hungary**
2013	Tamás Nagy and Judit Sebők (joint supervision with Prof. András Lőrincz for the National Scientific Conference of Students, Project title: "3D Constrained Local Model and its use in Facial Expression Recognition", the project won the 3rd place)
2008	Milán Magdics (M.Sc. Thesis title: "Procedural Modelling in Computer Graphics")
2007	Péter Balázs (M.Sc. Thesis title: "Study on Distributed, Online Games")

Undergrad Supervision	**Eötvös Loránd University, Budapest, Hungary**
2008	Péter Surányi (B.Sc. Project title: “3D Graphical Engine for Rendering Exterior Scenes”)
2007	Krisztián Bokros (B.Sc. Project title: “3D Simulator using UIQ and OpenGL ES”)
2007	Gergely Klár (B.Sc. Project title: “Numerical Methods for Cloth Simulation”)
2006	Endre Kolláth (B.Sc. Project title: “Generating and Rendering of Near-realistic 3D Trees”)
2006	Péter Balázs (B.Sc. Project title: “Networked, 3D Space Simulation using Java3D”)

Professional Activities

Events:

- Area Chair, The 13th IEEE Conference on Automatic Face and Gesture Recognition (FG 2018). http://fg2018.org/
- Data Chair, Facial Expression Recognition and Analysis Challenge (FERA2017), http://sspnet.eu/fera2017/
- General Chair of 1st Workshop on 3D Face Alignment in the Wild (3DFAW) & Challenge (In conjunction with ECCV 2016, http://mhug.disi.unitn.it/workshop/3dfaw/)

Memberships:

- Founding member of the Section of Robotics, John von Neumann Computer Society, Hungary
- Editorial Board Member of the International Journal of Computer Vision and Signal Processing (IJCVSP)
- Member of the Student Activities Subcommittee at the IEEE Computational Intelligence Society, 2010 – 2012
- Member of the NAIST International Collaborative Laboratory for Robotics Vision, Nara, Japan, 2014 –
- IEEE Member
- 2015: PC member of FG’15, CVPR’15
- 2014: PC member of ICIEV’14
- 2013: PC member of FG’13, ICIEV’13
- 2012: PC member of ICIEV’12, IECON’12

Reviewing for Scientific Journals:

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Affective Computing
- Elsevier Journal of Visual Communication and Image Representation
- Elsevier The Visual Computer
- MIT Press Neural Computation
- SpringerPlus
- International Journal of Computer Vision and Signal Processing

Reviewing for Conferences

- Computer Vision and Pattern Recognition (CVPR)
- Automatic Face and Gesture Analysis (FG)
- International Conference on Informatics, Electronics and Vision (ICIEV)

Skills

Languages	Hungarian (native), English (fluent), Japanese (intermediate), German (basic)
Computer languages	Matlab, C++, C#, Object Pascal, Assembly (Z80, x86)

Invited Talks

2017 **Challenges Facing Computational Face**
Carnegie Mellon University, Vision and Autonomous Systems Center Seminar (1 hour)
Pittsburgh, PA, USA, 2017

2016 **Automated 3D Face Tracking for Facial Behavior Analysis**
Nara Institute of Science and Technology Seminar (1 hour)
Nara, Japan, 2016

2015 **Automated Expression and Gaze Analysis**
Realeyes Ltd., colloquium (1 hour)
Budapest, Hungary, 2015

2015 **Automated 3D Gaze Estimation and Expression Detection**
Carnegie Mellon University, People Image Analysis Workshop (30 mins)
Pittsburgh, PA, USA, 2015

2015 **Large-Scale Facial Behavior Understanding**
RIKEN Advanced Institute for Computational Science (AICS), colloquium (1 hour)
Tokyo, Japan, 2015

2014 **Automated 3D Face Tracking for Facial Behavior Analysis**
Chuo University, Faculty of Science and Engineering Seminar (1.5 hour)
Tokyo, Japan, 2015

2014 **Dense 3D Face Alignment in Real-Time**
Carnegie Mellon University, People Image Analysis Workshop (30 mins)
Pittsburgh, PA, USA, 2014

2014 **Automatic Coding of Facial Expressions using Dense 3D Deformable Models**
Apple Inc., colloquium (1 hour)
Cupertino, CA, USA, 2014

2012 **Facial Expression Analysis based on 3D Deformable Models**
Carnegie Mellon University, Vision and Autonomous Systems Center Seminar (1 hour)
Pittsburgh, PA, USA, 2012

2011 **Affective Computing in Intelligent Environments**
Eötvös Loránd University, NJSZT Robotics Seminar (1 hour)
Budapest, Hungary, 2011.

2010 **Safe Robot Controlling System using the iSpace Environment**
Seoul National University, Seminar on Electrical Engineering,
Seoul, Korea, 2010.

2010 **Cognitive Robotics and Emotion Recognition in iSpace Environments**
Eötvös Loránd University, John von Neumann Computer Society (Section of Robotics) Seminar (1 hour)
Budapest, Hungary, 2010.

2009 **Cognitive Robotics in the Intelligent Space**
University of Pisa, Centro E. Piaggio (1 hour)
Italy, Pisa, 2009.

Publications

Theses

2012 László A. Jeni, **Study on Facial Expression Analysis based on 3D Deformable Model**, PhD thesis, The University of Tokyo, 2012.

2004 László A. Jeni, **Artificial Intelligence Techniques used in the Game of Go**, Master's thesis, Eötvös Loránd University, 2004.

Journal articles

2017 Sergely Tulyakov, László A. Jeni, Jeffrey F. Cohn, Nicu Sebe, **Viewpoint-consistent 3D Face Alignment**, in IEEE Transactions on Pattern Analysis and Machine Intelligence, 2017 (http://doi.org/10.1109/TPAMI.2017.2750687)

2016 László A. Jeni, Jeffrey F. Cohn, Takeo Kanade, **Dense 3D Face Alignment from 2D Video for Real-Time Use**, In Image and Vision Computing, 2016 (http://dx.doi.org/10.1016/j.imavis.2016.05.009)

2014 Jeffrey M. Girard, Jeffrey F. Cohn, László A. Jeni, Michael A. Sayette, Fernando De La Torre, **Spontaneous facial expression in unscripted social interactions can be measured automatically**, In Behavior Research Methods, Springer US, 2014.

2012 László A. Jeni, András Lőrincz, Tamás Nagy, Zsolt Palotai, Judit Sebők, Zoltán Szabó, Dániel Takács, **3D shape estimation in video sequences provides high precision evaluation of facial expressions**, In Image and Vision Computing, Elsevier, volume 30, 2012.

2012 László A. Jeni, Hideki Hashimoto, Takashi Kubota, **Robust Facial Expression Recognition Using Near Infrared Cameras**, In Journal of Advanced Computational Intelligence and Intelligent Informatics, Fujipress, volume 16, 2012.

2010 Hideki Hashimoto, Takeshi Sasaki, László A. Jeni, **Current Status of Intelligent Space**, In Journal of Measurement Science and Instrumentation, volume 01, 2010.

2008 László A. Jeni, György Flórea, András Lőrincz, **InfoMax Bayesian Learning of the Furuta Pendulum**, In Acta Cybernetica, volume 18, 2008.

Conferences & workshops

2018 Mengtian Li, Laszlo Jeni, Deva Ramanan. **Brute-Force Facial Landmark Analysis With A 140,000-Way Classifier.** Accepted to AAAI 2018.

2018 Mohit Sharma, Dragan Ahmetovic, Laszlo Jeni, Kris Kitani. **Recognizing Visual Signatures of Spontaneous Head Gestures.** Accepted to WACV 2018.

2017 Michel F Valstar, Enrique Sánchez-Lozano, Jeffrey F Cohn, László A Jeni, Jeffrey M Girard, Zheng Zhang, Lijun Yin, Maja Pantic. **FERA 2017 - Addressing Head Pose in the Third Facial Expression Recognition and Analysis Challenge**. In 2017 11th IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG), 2017.

2017 Jeffrey M Girard, Wen-Sheng Chu, László A Jeni, Jeffrey F Cohn, Fernando De la Torre. **Sayette Group Formation Task (GFT) Spontaneous Facial Expression Database**, In 2017 11th IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG), 2017.

2016 László A. Jeni, Sergey Tulyakov, Lijun Yin, Nicu Sebe, Jeffrey F. Cohn. **The First 3D Face Alignment in the Wild (3DFAW) Challenge**. In European Conference on Computer Vision, pp. 511-520. Springer International Publishing, 2016.

2016 Ciprian Corneanu, Marc Oliu, Sergio Escalera, László A Jeni, Jeffrey F. Cohn, Takeo Kanade, **Continuous Supervised Descent Method for Facial Landmark Localisation**, In Asian Conference on Computer Vision (ACCV), 2016.

2016 Zoltán Tősér, László A Jeni, András Lőrincz, Jeffrey F Cohn, **Deep Learning for Facial Action Unit Detection Under Large Head Poses**, In 2014 European Conference on Computer Vision and Workshops(ECCVW), 2016.

2016 László A Jeni, Jeffrey F Cohn, **Person-independent 3D Gaze Estimation using Face Frontalization**, In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2016.

2016 Zoltán Tősér, Robert Rill, Kinga Faragó, László A Jeni, András Lőrincz, **Personalization of Gaze Direction Estimation with Deep Learning**, In Informatik (KI 2016), 2016.

2015 László A. Jeni, Jeffrey F. Cohn, Takeo Kanade, **Dense 3D Face Alignment from 2D Videos in Real-Time**, IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2015 (**Best Paper Award**)

2015 Jeffrey M. Girard, Jeffrey F. Cohn, László A. Jeni, Simon Lucey, Fernando De la Torre, **How much training data for facial action unit detection?**, IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2015 (accepted)

2014 László A. Jeni, András Lőrincz, Zoltán Szabó, Jeffrey F. Cohn, Takeo Kanade, **Spatio-temporal Event Classification using Time-series Kernel based Structured Sparsity**, In 2014 European Conference on Computer Vision (ECCV), 2014.

2013 András Lőrincz, Gyöngyvér Molnár, László A. Jeni, Zoltán Tősér, Attila Rausch, Jeffrey F. Cohn, Benő Csapó, **Towards entertaining and efficient educational games**, In 2013 NIPS Workshop on Data Driven Education, 2013.

2013 András Lőrincz, László A. Jeni, Zoltán Szabó, Jeffrey F. Cohn, Takeo Kanade, **Emotional Expression Classification Using Time-Series Kernels**, In 2013 IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2013.

2013 László A. Jeni, Jeffrey M. Girard, Jeffrey F. Cohn, Fernando De La Torre, **Continuous AU intensity estimation using localized, sparse facial feature space**, In 2013 10th IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG), 2013.

2013 László A. Jeni, Jeffrey F. Cohn, Fernando De La Torre, **Facing Imbalanced Data--Recommendations for the Use of Performance Metrics**, In 2013 Humaine Association Conference on Affective Computing and Intelligent Interaction (ACII), 2013.

2011 László A. Jeni, Hideki Hashimoto, András Lőrincz, Efficient, Pose Invariant Facial Emotion **Classification using 3D Constrained Local Model and 2D Shape Information**, In 2011 IEEE Computer Vision and Pattern Recognition Workshops (CVPR Workshops), 2011.

2011 Leon Palafox, László A. Jeni, Hideki Hashimoto, **Using Conditional Random Fields to validate observations in a 4W1H paradigm**, In 4th Conference on Human System Interaction (HSI), 2011. (**Session Best Paper Award**)

2011 | Leon Palafox, László A. Jeni, Hideki Hashimoto, **5W1H as a Human Activity Recognition Paradigm in the iSpace**, In 8th Asian Control Conference (ASCC), 2011.

2011 | László A. Jeni, Dániel Takács, András Lőrincz, **High Quality Facial Expression Recognition in Video Streams using Shape Related Information only**, In 2011 IEEE International Conference on Computer Vision Workshops (ICCV Workshops), 2011.

2010 | Leon Palafox, László A. Jeni, Hideki Hashimoto, B. H. Lee, **Recognizing Facial Expressions in the Intelligent Space**, In The 2010 International Symposium on Intelligent Systems (iFAN), 2010.

2010 | László A. Jeni, Hideki Hashimoto, **Facial Expression Recognition using Near Infrared Cameras**, In 1st International Workshop on Cognitive Infocommunications (CogInfoCom), 2010.

2010 | Zoltán Istenes, Máté Tejfel, László A. Jeni, **Verified Mobile Code Repository Simulator for the Intelligent Space**, In 8th International Conference on Applied Informatics (ICAI), 2010.

2009 | Péter Zanaty, Péter Korondi, Gábor Sziebig, László A. Jeni, **Image based Automatic Object Localisation in iSpace Environment**, In 10th International Symposium of Hungarian Researchers on Computational Intelligence and Informatics (CINTI), 2009.

2009 | László A. Jeni, Péter Korondi, Zoltán Istenes, Hideki Hashimoto, **Safe Mobile Robot Control in the iSpace Environment**, In 9th IFAC Symposium on Robot Control (SYROCO), 2009.

2009 | László A. Jeni, Zoltán Istenes, Máté Tejfel, Péter Korondi, Hideki Hashimoto, **Adaptive, safe mobile robot programming in the Intelligent Space**, In 2nd IEEE International Conference on Human System Interaction (HSI), 2009.

2008 | Máté Tejfel, Zoltán Istenes, László A. Jeni, **Verified Mobile Code Repository in the Intelligent Space**, In 6th Conference of PhD Students in Computer Science (CSCS), 2008.

2008 | 佐々木 毅, 周 淼磊, 横井 一樹, Leon Palafox, 田村 一, László A. Jeni, Peshala Gehan Jayasekara, 橋本 秀紀, **実環境における移動ロボットナビゲーションシステムの研究開発**, In 第 9 回計測自動制御学会システムインテグレーション部門講演会(SI2008), 2008.

2008 | László A. Jeni, Zoltán Istenes, Péter Szemes, Hideki Hashimoto, **Robot Navigation Framework Based on Reinforcement Learning for Intelligent Space**, In 1st IEEE International Conference on Human System Interaction (HSI), 2008.

2007 | László A. Jeni, Zoltán Istenes, Máté Tejfel, **Safe Mobile Code in the Intelligent Space**, In 2nd Symposium of Young Researchers on Intelligent Systems (IRFIX), 2007.

2007 | László A. Jeni, Zoltán Istenes, Péter Korondi, Hideki Hashimoto, **Hierarchical Reinforcement Learning for Mobile Robot Navigation using the iSpace Concept**, In 11th IEEE International Conference on Intelligent Engineering Systems (INES), 2007.

2007 | György Antal, László Szirmai-Kalos, László A. Jeni, **Rendering Subdivision Surfaces Efficiently on the GPU**, In 4th Hungarian Conference on Computer Graphics and Geometry, 2007.

2006 | László A. Jeni, Zoltán Istenes, Péter Korondi, Hideki Hashimoto, **Mobile Agent Control in Intelligent Space using Reinforcement Learning**, In International Symposium of Hungarian Researchers on Computational Intelligence (HUCI), 2006.

2005 László A. Jeni, **Real-time dual paraboloid shadow mapping**, National Scientific Conference of Students (OTDK 2005), Section of Computer Graphics (1st place), 2005.

Patents

2013 László A. Jeni, **Method and apparatus for locating features of an object using deformable models**, European Patent, EP2672423A1, 2013.

2013 László A. Jeni, **Method and apparatus using adaptive face registration method with constrained local models and dynamic model switching**, European Patent, EP2672424A1, 2013.

2013 Zoltán Szabó, László A. Jeni, Dániel Takács, **Method and apparatus with deformable model fitting using high-precision approximation**, European Patent, EP2672425A1, 2013.