Moin Nabi

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CONTACT INFORMATION

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Berlin, Germany

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CURRENT POSITION

Senior Research Scientist
Machine Learning Research | SAP Innovation Center Network, **July 2017 - Now**
SAP SE., Berlin

EDUCATION

Italian Institute of Technology (IIT), Genova, Italy
Ph.D. of Computer Science, Pattern Analysis and Computer Vision lab. **2012 - 2015**
- Dissertation: *Mid-level Representation for Visual Recognition.*
- Advisor: Prof. Vittorio Murino.

Amirkabir University of Technology (Tehran Polytechnic), Iran
Master of Engineering in Artificial Intelligence, Computer Engineering Dep. **2009 - 2011**
- Thesis: *Human Action Recognition in Still Image.*
- Advisor: Prof. Mohammad Rahmati.

Shomal University of Amol (SUA), Amol, Iran
Bachelor of Engineering in Software, Computer Engineering Dep. **2003 - 2008**

RESEARCH EXPERIENCE

Postdoctoral Research Fellow, Deep Relational Learning Group,
University of Trento, Italy **July 2015 - July 2017**
Collaborating with: Prof. Nicu Sebe.

Visiting Researcher, Graphics and Imaging Laboratory (GRAIL),
University of Washington, Seattle, WA, USA **Sep 2013 - Mar 2014**
Supervisor: Dr. Ali Farhadi.

Research Assistant, Machine Intelligence and Vision Lab.,
Sharif University of Technology, Tehran, Iran. **2011 - 2012**

Research Assistant, IPM Vision Group,
Institute for Research in Fundamental Sciences (IPM), Iran **2008 - 2011**
Advisor: Prof. Mehrdad Shahshahani.

AWARDS AND HONORS

- **Member of industrial board** of the PhD program at the University of Trento **2019**
- **2nd place** at the **VizWiz Grand Challenge** on VQA for Blind People at **ECCV 2018** **2018**
- **Microsoft Best Student Paper Awards: Second place** in IEEE International Conference on Image Processing **(ICIP 2017)**. **2017**
- **Best Paper Award Finalist** in International Conference on Image Processing **(ICIP)** **2016**
- **Awarded a postdoctoral research grant** from EU-FP7 project **(xLime)** to work at University of Trento, Italy. **2015**
- **Awarded a research grant** to work at University of Washington, Seattle, WA, USA. **2013**
- **Ph.D. Fellowship award** from the PAVIS Lab at Italian Institute of Technology, Italy. **2012**
- **Awarded a travel grant** to attend at INRIA **VRML 2012**, Grenoble, France. **2012**
- Awarded **Outstanding Student** certificate & prize by Shomal University President, Iran. **2005**
- **Honorable Mention** in ACM-ICPC Regional Contest, Tehran, Iran. **2004**
- **Semifinalist** in Iranian National Olympiad in Informatics (INOI). **2001**
- **Ranked in the top 1%** of Iranian exceptional talents (NODET). **1999**

BOOK CHAPTERS

- **Abnormal Event Recognition in Crowd Environments**
  M. Nabi, H. Mousavi, H.R. Rabiee, M. Ravanbakhsh, V. Murino and N. Sebe
  In book on "Applied Cloud Deep Semantic Recognition", Taylor Francis Ltd (2018)

JOURNAL
PUBLICATIOS

- **Self-Paced Deep Learning for Weakly Supervised Object Detection**.
  M. Nabi*, E. Sangineto*, D. Culibrk, and N. Sebe
  IEEE Transaction on Pattern Analysis and Machine Intelligence (**T-PAMI 2018**)

- **Detection and Localization of Crowd Abnormal Behavior using a Tracklet-Based Model**
  H.R. Rabiee, H. Mousavi, M. Nabi and M. Ravanbakhsh
  International Journal of Machine Learning and Cybernetics (2018).

- **Crowd Behavior Representation: An Attribute-based Approach**
  H.R. Rabiee, J. Haddadnia, H. Mousavi, M. Nabi, V. Murino and N. Sebe
  SpringerPlus Journal (2016).

CONFERENCE
PUBLICATIONS

- **Budget-Aware Adapters for Multi-Domain Learning**
  R. Berriel, S. Lathuiliere, M. Nabi, T. Klein, T. Oliveira-Santos, N. Sebe, and E. Ricci
  IEEE International Conference on Computer Vision (**ICCV 2019**)
  Seoul, South Korea.

- **Attention Is (not) All You Need for Commonsense Reasoning**
  T. Klein and M. Nabi
  In Proceedings of the Association for Computational Linguistics (**ACL 2019**)
  Florence, Italy.

- **Uncertainty-Driven Segmentation through Human-Machine Collaborative Learning**
  M. Ravanbakhsh, T. Klein, K. Batmanghelich and M. Nabi
  International Conference on Medical Imaging with Deep Learning (**MIDL 2019**)
  London, UK.

- **Learning to Remember: Synaptic Plasticity Driven Framework for Continual Learning**
  O. Ostapenko, M. Puscas, T. Klein, P. Jahnichen, and M. Nabi
  IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2019**)
  Long Beach, CA, USA.

- **Prune Your Neurons Blindly: Network Compression through Structured Pruning**
  A. Salama, O. Ostapenko, T. Klein, and M. Nabi
  IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2019)
  Brighton, UK. (**Oral Presentation**).

- **Low-Shot Learning from Imaginary 3D Model**.
  F. Pahde, M. Puscas, J. Wolff, T. Klein, N. Sebe, and M. Nabi
  IEEE Winter Conference on Applications of Computer Vision (**WACV 2019**)
  Hawaii, USA.

- **Self-paced Adversarial Training for Multimodal Few-shot Learning**.
  F. Pahde, O. Ostapenko, T. Klein, P. Jahnichen, and M. Nabi
  IEEE Winter Conference on Applications of Computer Vision (**WACV 2019**)
  Hawaii, USA.

- **Training Adversarial Discriminators for Abnormality Detection in Crowds**.
  M. Ravanbakhsh, E. Sangineto, M. Nabi and N. Sebe
  IEEE Winter Conference on Applications of Computer Vision (**WACV 2019**)
  Hawaii, USA.

- **Discriminative Hallucination for Multimodal Few-shot Learning**
  F. Pahde, M. Nabi, T. Klein, P. Jahnichen
  IEEE International Conference on Image Processing (ICIP 2018)
  Athens, Greece (**Oral Presentation**).

- **Fast but Not Deep: Efficient Crowd Abnormality Detection with Local Binary Tracklets**.
  M. Ravanbakhsh, H. Mousavi, M. Nabi, L. Marcenaro and C. Regazzoni
  IEEE Advanced Video and Signal-based Surveillance (AVSS 2018)
  Auckland, New Zealand, (**Oral Presentation**).

- **Plug-and-Play CNN for Crowd Analysis: An Application in Abnormal Event Detection**.
  M. Ravanbakhsh, M. Nabi, Mousavi, E. Sangineto and N. Sebe
  IEEE Winter Conference on Applications of Computer Vision (**WACV 2018**)
  Lake Tahoe, USA.

- **Vision and Language Integration: Moving beyond Objects**
  R. Shekhar, S. Pezzelle, A. Herbelot, M. Nabi, E. Sangineto and R. Bernardi
  International Conference on Computational Semantics (IWCS 2017)
  Montpellier, France.

- **Autonomous Crowd-sourcing through Human-Machine Collaborative Learning**.
  A. Abad, M. Nabi and A. Moschitti
  International ACM Conference on Research Development in Information Retrieval **(SIGIR 2017)**
  Tokyo, Japan.

- **Abnormal Event Detection in Videos using Generative Adversarial Nets**
  M. Ravanbakhsh, M. Nabi, E. Sangineto, L. Marcenaro, C. Regazzoni and N. Sebe
  IEEE International Conference on Image Processing (ICIP 2017)
  Beijing, China. **(Microsoft Best Student Paper Award)**

- **A Cross-Modal Adaptation Approach for Brain Decoding**
  P. Ghaemmaghami, M. Nabi, Y. Yan, G. Riccardi and N. Sebe
  IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2017)
  New Orleans, USA.

- **Self-Crowdsourcing for Relation Extraction**
  A. Abad, M. Nabi and A. Moschitti,
  In Proceedings of the Association for Computational Linguistics **(ACL 2017)**
  Vancouver, Canada.

- **FOIL it! Find One mismatch between Image and Language caption**
  R. Shekhar, S. Pezzelle, Y. Klimovich, A. Herbelot, M. Nabi, E. Sangineto and R. Bernardi
  In Proceedings of the Association for Computational Linguistics **(ACL 2017)**
  Vancouver, Canada. **(Oral Presentation)**

- **CNN-aware Binary Map For General Image Segmentation**
  H. Mousavi, M. Ravanbakhsh, M. Nabi, M. Rastegari and C. Regazzoni
  IEEE International Conference on Image Processing (ICIP 2016)
  Phoenix, USA. **(Finalist for Best Paper Award: 7/∼2000 submissions)**

- **Sparse-coded Cross-domain Adaptation from the Visual to the Brain Domain**
  P. Ghaemmaghami, M. Nabi, Y. Yan and N. Sebe
  IEEE International Conference on Pattern Recognition (ICPR 2016)
  Cancun, Mexico. **(Oral Presentation)**

- **Novel Dataset for Fine-grained Abnormal Behavior Understanding in Crowd**
  H.R. Rabiee, J. Haddadnia, H. Mousavi, M. Kalantarzadeh, M. Nabi, V. Murino
  IEEE Advanced Video and Signal-based Surveillance (AVSS 2016)
  Colorado, USA.

- **Learning with Dataset Bias in Latent Subcategory Models**
  D. Stamos, S. Martelli, M. Nabi, A. McDonald, V. Murino and M. Pontil
  IEEE Conference on Computer Vision and Pattern Recognition **(CVPR 2015)**
  Boston, USA.

- **Crowd Motion Monitoring Using Tracklet-based Commotion Measure**
  M. Nabi*, H. Mousavi*, H. Kiani, A. Perina and V. Murino
  IEEE International Conference on Image Processing (ICIP 2015)
  Montreal, Canada.

- **Abnormality Detection with Improved Histogram of Oriented Tracklets**
  H. Mousavi, M. Nabi, H. Kiani, A. Perina and V. Murino
  International Conference on Image Analysis and Processing (ICIAP 2015)
  Genova, Italy.

- **Human Action Recognition in Still Images using Bag of Latent Poselets**
  M. Nabi and M. Rahmati
  European Conference on Visual Media Production (CVMP 2012)
  London, England.

WORKSHOP
PUBLICATIONS

- **Weakly Supervised Disentanglement using Gaussian Mixture VAEs**
  J. N. Morshuis, C. Samplawski, and M. Nabi
  Conference on Neural Information Processing Systems (NeurIPS 2019)
  Workshop on Information Theory and Machine Learning (ITML)
  Vancouver, Canada. **(Spotlight)**

- **Multimodal Self-Supervised Learning for Medical Image Analysis**
  A. Taleb, C. Lippert, M. Nabi, and T. Klein
  Conference on Neural Information Processing Systems (NeurIPS 2019)
  Medical Imaging Meets NeurIPS Workshop (MED-NeurIPS)
  Vancouver, Canada. **(Oral Presentation)**

- **SynthRel0: Towards a Diagnostic Dataset for Relational Representation Learning**
  D. Dorda and M. Nabi
  IEEE International Conference on Computer Vision (ICCV 2019)
  workshop on Graph based Learning in Computer Vision (SGRL)
  Seoul, South Korea.

- **Weakly Supervised One-Shot Segmentation**
  H. Raza, M. Ravanbakhsh, T. Klein and M. Nabi
  IEEE International Conference on Computer Vision (ICCV 2019)
  Workshop on Multi-Discipline Approach for Learning Concepts (MDALC)
  Seoul, South Korea. **(Spotlight)**

- **A Structured Class-Blind Pruning Technique for Model Compression**
  A. Salama, O. Ostapenko, T. Klein, and M. Nabi
  Conference on Neural Information Processing Systems (NIPS 2018)
  Workshop on Compact Deep Network Representation with Industrial Applications (CDNNRIA)
  Montreal, Canada. **(Spotlight)**

- **Learning to Remember what to Remember: A Synaptic Plasticity Driven Framework**
  O. Ostapenko, M. Puscas, T. Klein, P. Jahnichen, and M. Nabi
  Conference on Neural Information Processing Systems (NIPS 2018)
  Continual Learning Workshop (CL)
  Montreal, Canada.

- **When the Distribution Is the Answer: An Analysis of the Responses in VizWiz**
  D. Dushi, S. Pezzelle, T. Klein, and M. Nabi
  European Conference on Computer Vision (ECCV 2018),
  Workshop on Visual Question Answering for Blind People (VizWiz)
  Munich, Germany. **(Oral Presentation)**

- **An Evaluative Look at the Evaluation of VQA**
  S. Jolly, S. Pezzelle, T. Klein, A. Dengel and M. Nabi
  European Conference on Computer Vision (ECCV 2018)
  Workshop on Shortcomings in Vision and Language (SiVL)
  Munich, Germany.

- **Cross-modal Hallucination for Few-shot Fine-grained Recognition**
  F. Pahde, T. Klein and M. Nabi
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)
  The Fifth Workshop on Fine-Grained Visual Categorization (FGVC)
  Salt Lake City, USA. **(Spotlight)**

- **Deferentially Private Federated Learning: A Client Level Perspective**
  R. Gayer, T. Klein and M. Nabi
  Conference on Neural Information Processing Systems (NIPS 2017)
  Workshop on Machine Learning on the Phone and other Consumer Devices (MLPCD)
  Long Beach, USA. **(Spotlight)**

- **Vision and Language Integration: Objects and beyond**
  R. Shekhar, S. Pezzelle, A. Herbelot, M. Nabi, E. Sangineto and R. Bernardi
  IEEE International Conference on Computer Vision (ICCV 2017)
  Workshop on Closing the Loop Between Vision and Language (CLVL)
  Venice, Italy. **(Spotlight)**

- **Efficient Convolutional Neural Network with Binary Quantization Layer**
  M. Ravanbakhsh, H. Mousavi, M. Nabi, L. Marcenaro, C. Regazzoni
  Conference on Neural Information Processing Systems (NIPS 2016)
  Bercelona, Spain.

- **Temporal Poselets for Collective Activity Detection and Recognition**
  M. Nabi, A. Del Bue and V. Murino
  IEEE International Conference on Computer Vision (ICCV 2013)
  Workshop on Understanding Human Activities: Context and Interactions (HACI)
  Sydney, Australia. **(Oral Presentation)**

PRE-PRINTS
AND REPORTS
- **Learning to Answer by Learning to Ask: Getting the Best of GPT-2 and BERT**
  T. Klein and M. Nabi
  arXiv:1911.02365 (2019).

- **Privacy-preserving Representation Learning by Disentanglement**
  T. Klein and M. Nabi
  openreview (2019).

- **MaSSeS: Majority, Subjectivity, and Semantic Similarity in the Evaluation of VQA**
  S. Jolly, S. Pezzelle, T. Klein, A Dengel and M. Nabi
  arXiv:1809.04344 (2018).

- **Emotion-Based Crowd Representation for Abnormality Detection**
  H.R. Rabiee, J. Haddadnia, H. Mousavi, M. Nabi, V. Murino and N. Sebe
  arXiv:1607.07646 (2016).

- **Mid-level Representation for Visual Recognition**
  M. Nabi
  Doctoral Dissertation, Italian Institute of Technology, April 2015.

- **Webly-supervised Discriminative Patches for Weakly-supervised Object Detection**
  M. Nabi, S. Divvala and A. Farhadi
  Technical Report, *University of Washington, 2014.*

- **Stock trend prediction using Twin Gaussian Process regression**
  M. Mojadadi, M. Nabi and S. Khadivi
  Technical Report, *Amirkabir University of Technology, 2011.*

- **A Turorial on Digital Image Processing using MATLAB**
  M. Nabi
  Technical Report, National Digital Image Processing Workshop, 2008, Iran.

SELECTED PRESENTATIONS	• **Challenges of Deep Learning for Visual Recognition** at *University of Amsterdam*	2019
	• **Multimodal Few-shot Learning** at *International Conference for Image Processing*	2018
	• **Human Behavior Understanding in the Wild** at *University of Trento*	2016
	• **Mid-level Representation for Visual Recognition** at *Italian Institure of Technology*	2015
	• **From Visual Subcategory to Webly-supervised Visual Recognition** at *UofT*	2015
	• **Webly-supervised Discriminative Patches** at *University of Washington*	2014
	• **Temporal Poselets for Collective Activity Detection and Recognition** at *ICCV*	2013
	• **All about Examplar-SVMs** at *Italian Institure of Technology*	2012
	• **Poselet-based Human Activity Recognition in Single Images** at *Sharif UT*	2011
	• **An Invitation to 3D Vision** at *IPM Computer Vision Workshop*	2010

TEACHING EXPERIENCE	• **Co-Instructor of** Doctoral course on Deep Learning *at University of Trento*	2016
	• **Teaching** Programming Languages *at National Organization for Development of Exceptional Talents, Tehran, Iran.*	2010
	• **Teaching Assistant** Programming Languages, Algorithms Design, and Artificial Intelligence *at Shomal University.*	2003 - 2007

PROFESSIONAL ACTIVITIES

Journal Reviewer:

International Journal of Computer Vision (IJCV)	2018
Computer Vision and Image Understanding (CVIU)	2018
IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)	2017
IEEE Transactions on Pattern Analysis and Machine (TPAMI)	2016
Computer Vision and Image Understanding (CVIU)	2016
Pattern Recognition Letters	2016
IEEE Transaction on Multimedia (TOMM)	2015

Program Committee or Reviewer for Conferences

International Conference on Machine Learning (ICML)	2020
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2020
Conference on Artificial Intelligence (AAAI)	2020
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2019
North American Chapter of the Association for Computational Linguistics (NAACL)	2019
International Conference on Computer Vision (ICCV)	2019
British Machine Vision Conference (BMVC)	2019

European Conference on Computer Vision (ECCV)	2018
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2018
International Conference on Computer Vision (ICCV)	2017
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2017
European Conference on Computer Vision (ECCV)	2016
International Conference on Computer Vision (ICCV)	2015
IEEE Winter Conference on Applications of Computer Vision (WACV)	2014
British Machine Vision Conference (BMVC)	2013

Organizing Committee

NACCL Workshop on Shortcomings in Vision and Language (SiVL), Minneapolis, USA	2019
3rd SAP Machine Learning Research Retreat, Berlin, Germany	2019
ECCV Workshop on Shortcomings in Vision and Language (SiVL), Munich, Germany	2018
2nd SAP Machine Learning Research Retreat, Munich, Germany	2018
1st SAP Machine Learning Research Retreat, Potsdam, Germany	2017
Deep Learning Crash Course at University of Trento, Italy	2017
IPM Computer Vision Workshop, Iran	2010
Digital Image Processing Workshop, Iran	2007
ACM-ICPC Programming contest, Iran	2005

PATENTS

Adversarial Learning for Multimodal Few-shot Learning	
EU Patent No. 19180590.2 - 1207 (Filed)	2019
Cross-modal Generation for Fine-grained Recognition	
EU Patent No. 19180588.6 - 1207 (Filed)	2019

STUDENTS AND INTERNS

Daniel Dorda (Now at Disney Research)	2019
Max Bain (Now a PhD student at VGG - University of Oxford)	2019
Mahdyar Ravanbakhsh (Now a PostDoc researcher at TU-Berlin)	2019
Oleksiy Ostapenko (Now a PhD Student at MILA - University of Montreal)	2019
Mihai M. Puscas (Now a researcher at Huawei Research - Dublin)	2018
Sandro Pezzelle (Now a PostDoc researcher at University of Amsterdam)	2018
Frederik Pahde (Now at Amazon - Edinburgh)	2018
Shailza Jolly (Now a PhD Student at TU-Kaiserslautern)	2018
Aditya Rajagopal (Now a MS student at Georgia Institute of Technology)	2018
Felix Last (Now a PhD student at Intel)	2018
Denis Dushi (Now at Amazon - Berlin)	2018
Vadim Tschernezki (Now at Google X - The Moonshot Factory)	2017
Robin C. Geyer (Now a PhD Student at ETH-Zurich)	2017

SKILLS

- **Languages**: Persian (native), English (fluent), Arabic (moderate), Italian (basic), German (basic)
- **Programming Languages**: Python, C/C++, CUDA, JavaScript, HTML, CSS, Matlab
- **Operating Systems**: Linux, Windows, MacOs X
- **Tools**: Tensorflow, Caffe, Keras, PyTorch, Torch, OpenCV, Git, Vim, Docker, Google Cloud Platform, Amazon Web Services, Scikit-learn, Pandas, Libsvm, Liblinear, Puppet, LaTeX.

REFERENCES

- Professor Massimiliano Pontil, University Collage London (UCL)
  m.pontil@cs.ucl.ac.uk
- Professor Nicu Sebe, DISI, University of Trento
  Niculae.Sebe@unitn.it
- Professor Vittorio Murino, Italian Institute of Technology (IIT)
  vittorio.murino@iit.it
- Dr. Ali Farhadi, Associate Professor, CS&E, University of Washington (UW)
  ali@cs.washington.edu
- Professor Mehrdad Shahshahani, Stanford University.
  mehrdads@stanford.edu