REFERENCES

- Massih Reza Amini, Nicolas Usunier, and Cyril Goutte. 2009.
 Learning from Multiple Partially Observed Views an Application to Multilingual Text Categorization. NIPS (2009), 28–36.
- [2] Galen Andrew, Raman Arora, Jeff A Bilmes, and Karen Livescu. 2013. Deep canonical correlation analysis.. In ICML. 1247–1255.
- [3] Yuri Burda, Roger Grosse, and Ruslan Salakhutdinov. 2016. Importance Weighted Autoencoders. In ICLR.
- [4] Xiao Cai, Feiping Nie, Weidong Cai, and Heng Huang. 2013. Heterogeneous Image Features Integration via Multi-modal Semisupervised Learning Model. In ICCV. 1737-1744.
- [5] Rafael A Calvo and Sidney D'Mello. 2010. Affect detection: An interdisciplinary review of models, methods, and their applications. IEEE Transactions on Affective Computing 1, 1 (2010), 18–37.
- [6] Sarath Chandar, Mitesh M Khapra, Hugo Larochelle, and Balaraman Ravindran. 2016. Correlational neural networks. Neural computation 28, 2 (2016), 257–285.
- [7] Samuel Gershman, Matt Hoffman, and David Blei. 2012. Nonparametric variational inference. In ICML.
- [8] Trevor Hastie, Rahul Mazumder, Reza Zadeh, and Reza Zadeh. 2015. Matrix completion and low-rank SVD via fast alternating least squares. *Journal of Machine Learning Research* 16, 1 (2015), 3367–3402.
- [9] Elad Hazan, Roi Livni, and Yishay Mansour. 2015. Classification with Low Rank and Missing Data. In ICML. 257–266.
- [10] Xiaowei Jia, Kang Li, Xiaoyi Li, and Aidong Zhang. 2014. A novel semi-supervised deep learning framework for affective state recognition on EEG signals. In *International Conference on Bioinformatics and Bioengineering (BIBE)*. IEEE, 30–37.
- [11] Raghunandan H. Keshavan, Sewoong Oh, and Andrea Montanari. 2009. Matrix completion from a few entries. *IEEE Transactions on Information Theory* 56, 6 (2009), 2980–2998.
- [12] Diederik Kingma and Jimmy Ba. 2014. Adam: A method for stochastic optimization. arXiv preprint arXiv:1412.6980 (2014).
- [13] Diederik P Kingma, Shakir Mohamed, Danilo Jimenez Rezende, and Max Welling. 2014. Semi-supervised learning with deep generative models. In NIPS. 3581–3589.
- [14] Diederik P Kingma, Tim Salimans, Rafal Jozefowicz, Xi Chen, Ilya Sutskever, and Max Welling. 2016. Improving Variational Inference with Inverse Autoregressive Flow. In NIPS. 4743–4751.
- [15] Diederik P Kingma and Max Welling. 2014. Auto-Encoding Variational Bayes. In ICLR.
- [16] Sander Koelstra, Christian Muhl, Mohammad Soleymani, Jong-Seok Lee, Ashkan Yazdani, Touradj Ebrahimi, Thierry Pun, Anton Nijholt, and Ioannis Patras. 2012. Deap: A database for emotion analysis; using physiological signals. IEEE Transactions on Affective Computing 3, 1 (2012), 18–31.
- [17] Wei Liu, Wei Long Zheng, and Bao Liang Lu. 2016. Emotion Recognition Using Multimodal Deep Learning. In *International Conference on Neural Information Processing*. 521–529.
- [18] Yifei Lu, Wei-Long Zheng, Binbin Li, and Bao-Liang Lu. 2015. Combining Eye Movements and EEG to Enhance Emotion Recognition.. In *IJCAI*. 1170–1176.
- [19] Tran Luan, Xiaoming Liu, Jiayu Zhou, and Rong Jin. 2017. Missing Modalities Imputation via Cascaded Residual Autoencoder. In CVPR, 4971–4980.
- [20] Lars Maaløe, Casper Kaae Sønderby, Søren Kaae Sønderby, and Ole Winther. 2016. Auxiliary deep generative models. In ICML. 1445–1453.
- [21] Jiquan Ngiam, Aditya Khosla, Mingyu Kim, Juhan Nam, Honglak Lee, and Andrew Y Ng. 2011. Multimodal deep learning. In *ICML*. 689–696.
- [22] Feiping Nie, Jing Li, Xuelong Li, et al. 2016. Parameter-Free Auto-Weighted Multiple Graph Learning: A Framework for Multiview Clustering and Semi-Supervised Classification. In *IJCAI*. 1881–1887.
- [23] Lei Pang, Shiai Zhu, and Chong-Wah Ngo. 2015. Deep multimodal learning for affective analysis and retrieval. *IEEE Transactions* on Multimedia 17, 11 (2015), 2008–2020.
- [24] Soujanya Poria, Erik Cambria, Rajiv Bajpai, and Amir Hussain. 2017. A review of affective computing: From unimodal analysis

- to multimodal fusion. Information Fusion 37 (2017), 98-125.
- [25] Brian Quanz and Jun Huan. 2012. CoNet: feature generation for multi-view semi-supervised learning with partially observed views. In CIKM. 1273–1282.
- [26] Hiranmayi Ranganathan, Shayok Chakraborty, and Sethuraman Panchanathan. 2016. Multimodal emotion recognition using deep learning architectures. In Applications of Computer Vision. 1–9.
- [27] Danilo Jimenez Rezende, Shakir Mohamed, and Daan Wierstra. 2014. Stochastic Backpropagation and Approximate Inference in Deep Generative Models. In NIPS. 1278–1286.
- [28] Martin Schels, Markus Kächele, Michael Glodek, David Hrabal, Steffen Walter, and Friedhelm Schwenker. 2014. Using unlabeled data to improve classification of emotional states in human computer interaction. *Journal on Multimodal User Interfaces* 8, 1 (2014), 5–16.
- (2014), 5-16.
 [29] Iulian V Serban, II Ororbia, G Alexander, Joelle Pineau, and Aaron Courville. 2016. Multi-modal Variational Encoder-Decoders. arXiv preprint arXiv:1612.00377 (2016).
- [30] Chao Shang, Aaron Palmer, Jiangwen Sun, Ko Shin Chen, Jin Lu, and Jinbo Bi. 2017. VIGAN: Missing view imputation with generative adversarial networks. In *IEEE International Conference on Bia Data*. 766–775.
- [31] Mohammad Soleymani, Sadjad Asghari-Esfeden, Yun Fu, and Maja Pantic. 2016. Analysis of EEG signals and facial expressions for continuous emotion detection. *IEEE Transactions on Affective* Computing 7, 1 (2016), 17–28.
- [32] Nitish Srivastava and Ruslan Salakhutdinov. 2014. Multimodal Learning with Deep Boltzmann Machines. *Journal of Machine Learning Research* 15 (2014), 2949–2980.
- [33] Panagiotis Tzirakis, George Trigeorgis, Mihalis A Nicolaou, B-jörn W Schuller, and Stefanos Zafeiriou. 2017. End-to-end multimodal emotion recognition using deep neural networks. IEEE Journal of Selected Topics in Signal Processing 11, 8 (2017), 1301–1309.
- [34] Johannes Wagner, Elisabeth Andre, Florian Lingenfelser, and Jonghwa Kim. 2011. Exploring fusion methods for multimodal emotion recognition with missing data. *IEEE Transactions on Affective Computing* 2, 4 (2011), 206–218.
- [35] C. Wang, X. Liao, L Carin, and D. B. Dunson. 2010. Classification with Incomplete Data Using Dirichlet Process Priors. *Journal of Machine Learning Research* 11, 18 (2010), 3269.
- [36] Weiran Wang, Raman Arora, Karen Livescu, and Jeff A Bilmes. 2015. On Deep Multi-View Representation Learning. In ICML. 1083–1092.
- [37] Weiran Wang, Xinchen Yan, Honglak Lee, and Karen Livescu. 2016. Deep Variational Canonical Correlation Analysis. arXiv: 1610.03454 (2016).
- [38] D Williams, X. Liao, Y. Xue, L Carin, and B Krishnapuram. 2007. On classification with incomplete data. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 29, 3 (2007), 427.
- [39] C. Xu, D. Tao, and C. Xu. 2015. Multi-view Learning with Incomplete Views. *IEEE Transactions on Image Processing* 24, 12 (2015), 5812–5825.
- [40] Shipeng Yu, Balaji Krishnapuram, Rmer Rosales, and R. Bharat Rao. 2011. Bayesian Co-Training. *Journal of Machine Learning Research* 12, 3 (2011), 2649–2680.
- [41] Lei Zhang, Yao Zhao, Zhenfeng Zhu, Dinggang Shen, and Shui-wang Ji. 2018. Multi-View Missing Data Completion. IEEE Transactions on Knowledge and Data Engineering 30, 7 (2018), 1296-1309.
- [42] Zixing Zhang, Fabien Ringeval, Bin Dong, Eduardo Coutinho, Erik Marchi, and Björn Schüller. 2016. Enhanced semi-supervised learning for multimodal emotion recognition. In ICASSP. IEEE, 5185–5189.
- [43] Wei-Long Zheng, Wei Liu, Yifei Lu, Bao-Liang Lu, and Andrzej Cichocki. 2018. EmotionMeter: A Multimodal Framework for Recognizing Human Emotions. *IEEE Transactions on Cybernetics* (2018), 1–13.
- [44] Wei-Long Zheng and Bao-Liang Lu. 2015. Investigating Critical Frequency Bands and Channels for EEG-based Emotion Recognition with Deep Neural Networks. *IEEE Transactions on Au*tonomous Mental Development 7, 3 (2015), 162–175.