Bárbara Caroline Benato
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Education

2019 - (present)	Institute of Computing, University of Campinas – Unicamp – Campinas, SP, Brazil PhD in Computer Science Dissertation: "Visual Active Learning guided by Feature Space Projections" Supervisor: Prof. Alexandre Xavier Falcão Laboratory of Image Data Science (http://lids.ic.unicamp.br/) Estimated conclusion: 2023
2017 - 2019	Institute of Computing, University of Campinas – Unicamp – Campinas, SP, Brazil MSc in Computer Science Thesis: "Data annotation guided by Feature Space Projection" Supervisor: Prof. Alexandre Xavier Falcão Laboratory of Image Data Science (http://lids.ic.unicamp.br/)
2013 - 2017	Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP – Bauru, SP, Brazil BSc in Information Systems Project: "A System for Metaheuristic Optimization of Convolutional Neural Networks" Cumulative GPA: 8,38 of 10 - Position between classmates: 4rd of 33

Academic Experience

March/19-July/19	Institute of Computing, University of Campinas – Unicamp Teaching assistance Course: Computer algorithms and programing Professor: Prof. Sandra Ávila
Abril/18-Sep/18	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP Research Internship funded by FAPESP at University of Groningen – Groningen, The Netherlands Project name: "Visual Analytics for User-Assisted Label Propagation in Neural-Network Image Classifier Design" Under orientation of Prof. Alexandru-Cristian Telea and Prof. Alexandre Xavier Falcão
March/17-Aug/19	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP MSc Research funded by FAPESP at Unicamp – Campinas/SP. Brazil Project name: "Autoencoders Neural Networks Optimization by Visual Analytics Data" Under orientation of Prof. Alexandre Xavier Falcão
Aug/16	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP Research Internship funded by FAPESP at Middlesex University – London, England Project name: "On the Optimization of Convolutional Neural Networks Using Bat Algorithm" Under orientation of Prof. Xin-She Yang and Prof. Aparecido Nilceu Marana.
Fev/15	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP Research Internship funded by FAPESP at Harvard University – Cambridge/MA, USA Project name: "On the Optimization of Convolutional Neural Networks and its Application for Face-based Emotion Recognition" Under orientation of Prof. David Cox and Prof. Aparecido Nilceu Marana.
Sep/14 – Dec/16	Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP Scientific Initiation (IC) Research funded by FAPESP at UNESP – Bauru/SP, Brazil Project name: "Convolution Neural Networks Optimization and its Application for Facial Expression Recognition" Under orientation of Prof. Aparecido Nilceu Marana.
Sep/13 – Aug/14	Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq Scientific Initiation (IC) funded by CNPq at UNESP – Bauru/SP, Brazil Project name: "Feature Weighting and Selection using Magnetic Optimization Algorithm" Under orientation of Prof. João Paulo Papa.
Apr/13 – Jul/13	Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq Research funded by CNPq at UNESP – Bauru/SP, Brazil Project name: "PyOPF: Data Structure Module" Under orientation of Prof. João Paulo Papa.

Technical Skills

Areas of interest: Artificial intelligence, pattern recognition, machine learning, deep learning, data analysis, visual analytics.

Programming skills: C, C++, Python, Pytorch, Keras, Tensorflow, Theano, Scikitlearn, Qt, Java, Android,   Caffe, Latex
Platforms: Ubuntu, MacOS.
Applications: Photoshop (advanced), Excel (basics), Eclipse (advanced)

Fluent in Portuguese. Functional in English (Toefl ITP Score: 497 – B1/2016). Basic Spanish.

Publications

2021   BENATO, B. C., TELEA, A. C., FALCÃO, A. X. 2021. Iterative Pseudo-Labeling with Deep Feature Annotation and Confidence-Based Sampling. In *2021 34th SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)* (pp. 192-198). IEEE.

BENATO, B. C., GOMES, J. F., TELEA, A. C., FALCÃO, A. X. 2021. Semi-supervised deep learning based on label propagation in a 2D embedded space. In *Iberoamerican Congress on Pattern Recognition* (pp. 371-381). Springer, Cham.

LAHERAS, L. P., RODRIGUES, P. S., LOPES, F. J., PALMEIRA, O. F., FALCÃO, A. X., BENATO, B. C., GIRALDI, G. A. 2021. Aumento de Dados Utilizando Firefly e Level Sets Aplicado à Segmentação de Imagens Médicas e Biológicas. *Revista Eletrônica de Iniciação Científica em Computação*, *19*(2).

BENATO, B. C., GOMES, J. F., TELEA, A. C., FALCÃO, A. X. (2021). Semi-automatic data annotation guided by feature space projection. *Pattern Recognition*, *109*, 107612.

2020   BENATO, B. C., DE SOUZA, I. E., GALVÃO, F. L., FALCÃO,, A. X. (2020). Convolutional Neural Networks from Image Markers. *arXiv preprint arXiv:2012.12108*.

DE SOUZA, I.E., BENATO, B.C. FALCÃO, A.X., 2020, November. Feature learning from image markers for object delineation. In *2020 33rd SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)* (pp. 116-123). IEEE.

RODER, M., PASSOS, L.A., RIBEIRO, L.C.F., BENATO, B.C., FALCÃO, A.X. PAPA, J.P., 2020, October. Intestinal parasites classification using deep belief networks. In *International Conference on Artificial Intelligence and Soft Computing* (pp. 242-251). Springer, Cham.

2019   MARTINS, SAMUEL B.; FALCÃO, ALEXANDRE X.; BENATO, BARBARA C. ; SILVA, BRUNA F. ; YASUDA, CLARISSA L. . Modeling normal brain asymmetry in MR images applied to anomaly detection without segmentation and data annotation. In: ComputerAided Diagnosis, 2019, San Diego. Medical Imaging 2019: Computer-Aided Diagnosis, 2019. p. 11.

2018   BENATO, BARBARA CAROLINE; TELEA, ALEXANDRU CRISTIAN; FALCAO, ALEXANDRE XAVIER. Semi-Supervised Learning with Interactive Label Propagation Guided by Feature Space Projections. In: 2018 31st SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI), 2018, Paraná. 2018 31st SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI), 2018. p. 392.

PEXINHO, ALAN ZANONI; BENATO, BARBARA CAROLINE; NONATO, LUIS GUSTAVO; FALCAO, ALEXANDRE XAVIER. Delaunay Triangulation Data Augmentation Guided by Visual Analytics for Deep Learning. In: 2018 31st SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI), 2018, Paraná. 2018 31st SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI), 2018. p. 384.

2016   BENATO, B. C.; MARANA, A. N.; PAPA J. P.. Ajuste fino de parâmetros de Redes Neurais por Convolução utilizando o Algoritmo de Otimização das Aves Migratórias. In: 29th Conference on Graphics, Patterns and Images (SIBGRAPI'16), 2016, São José dos Campos. Workshop of Undergraduate Works (WUW), 2016.

Volunteer Experience

Feb/16 – Dec16   Teaching basics of informatics to young people and adults, Associação Bethesda, Bauru/SP, Brazil

Jun/14 – Aug/14   Municipal Daycare Nursery: "CEI Santo Calory", Botucatu/SP, Brazil