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## Current position

Since 2019    Postdoctoral researcher
Artificial Intelligence Lab. Recod.ai
Institute of Computing
University of Campinas

## Areas of specialization

Computer Science • Machine Learning • Open-Set Recognition • Digital Forensics • Computer Vision • Time Series

## Education

2014–2018    PhD in Computer Science, University of Campinas (Unicamp), Brazil
2012–2014    MSc in Computer Science, University of Campinas (Unicamp), Brazil
2008–2012    BSc in Computer Science, Federal University of Ouro Preto (UFOP), Brazil

## Complementary Education

2018–2019  Postdoctoral researcher (9 months)
Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano
With Prof. Paolo Bestagini and Prof. Stefano Tubaro

2017–2018  Deep Learning Specialization (68 hours)
by deeplearning.ai, online on Coursera

2016–2017  Doctoral internship as a researcher assistant (1 year)
University of Colorado Colorado Springs (UCCS)
With Prof. Terrance Boult

2011  Short term course in Applied Functional Programming in Haskell (40 hours)
Utrecht University, Netherlands

## Languages
(Elementary • Basic • Intermediary • Advanced • Fluent or Native)

Portuguese  Native

English  Understanding Fluent  • Speaking Fluent  • Writing Fluent  • Reading Fluent

Spanish  Understanding Advanced  • Speaking Intermediary • Writing Advanced  • Reading Advanced

Italian  Understanding Intermediary • Speaking Intermediary • Writing Intermediary • Reading Advanced

## Grants, honors & awards

2016  Prêmio Inventores Unicamp • Reitoria da Unicamp e Agência de Inovação Inova Unicamp

2015  Honored Papers 2015 • Elsevier Computers in Biology and Medicine

## Publications

### Journal articles

2022  Werneck, Rafael; Prates, Raphael; Moura, Renato; Gonçalves, Maiara; Castro, Manuel; Soriano-Vargas, Aurea; **Mendes Júnior, Pedro**; Hossain, Manzur; Zampieri, Marcelo; Ferreira, Alexandre; Davólio, Alessandra; Schiozer, Denis; Rocha, Anderson (2021), "Data-driven deep-learning forecasting for oil production and pressure", *Journal of Petroleum Science and Engineering.* 210:109937.

2021  Soriano-Vargas, Aurea; Werneck, Rafael; Moura, Renato; **Mendes Júnior, Pedro**; Prates, Raphael; Castro, Manuel; Gonçalves, Maiara; Hossain, Manzur; Zampieri, Marcelo; Ferreira, Alexandre; Davolio, Alessandra; Hamann, Bernd; Schiozer, Denis; Rocha, Anderson (2021), "A visual analytics approach to anomaly detection in hydrocarbon reservoir time series data", *Journal of Petroleum Science and Engineering.* 206:108988.

2021  **Mendes Júnior, Pedro**; Boult, Terrance; Wainer, Jacques; Rocha, Anderson (2021), "Open-Set Support Vector Machines", *IEEE Transactions on Systems, Man, and Cybernetics: Systems.* Early Access, 1–14.

2019  **Mendes Júnior, Pedro**; Bondi, Luca; Bestagini, Paolo; Tubaro, Stefano; Rocha, Anderson, "An in-depth study on open-set camera model identification", *IEEE Access.* 7:180713–180726.

2018  Neira, Manuel; **Mendes Júnior, Pedro**; Rocha, Anderson; Torres, Ricardo, "Data-fusion techniques for open-set recognition problems", *IEEE Access.* 6:21242–21265.

2018  Werneck, Rafael; de Almeida, Waldir; Stein, Bernardo; Pazinato, Daniel; **Mendes Júnior, Pedro**; Penatti, Otávio; Rocha, Anderson; Torres, Ricardo, "Kuaa: A unified framework for design, deployment, execution, and recommendation of machine learning experiments", *Elsevier Future Generation Computer Systems.* 78(1):59–76.

2017  **Mendes Júnior, Pedro**; Souza, Roberto; Werneck, Rafael; Stein, Bernardo; Pazinato, Daniel; de Almeida, Waldir; Penatti, Otávio; Torres, Ricardo; Rocha, Anderson, "Nearest neighbors distance ratio open-set classifier", *Springer Machine Learning.* 106(3):359–386.

2016  Pazinato, Daniel; Stein, Bernardo; de Almeida, Waldir; Werneck, Rafael; **Mendes Júnior, Pedro**; Penatti, Otávio; Torres, Ricardo; Menezes, Fabio; Rocha, Anderson, "Pixel-level tissue classification for ultrasound images", *IEEE Journal of Biomedical and Health Informatics.* 20(1):256–267.

2015  Penatti, Otávio; Werneck, Rafael; de Almeida, Waldir; Stein, Bernardo; Pazinato, Daniel; **Mendes Júnior, Pedro**; Torres, Ricardo; Rocha, Anderson, "Mid-level image representations for real-time heart view plane classification of echocardiograms", *Elsevier Computers in Biology and Medicine.* 66:66–81.

## Proceedings

2019  **Mendes Júnior, Pedro**; Bondi, Luca; Bestagini, Paolo; Rocha, Anderson; Tubaro, Stefano (2019), "A PRNU-based method to expose video device compositions in open-set setups", In: *IEEE International Conference on Image Processing.* pp. 96–100.

2015  Li, Lin; Muñoz, Javier; Almeida, Jurandy; Calumby, Rodrigo; Penatti, Otávio; Dourado, Ícaro; Nogueira, Keiller; **Mendes Júnior, Pedro**; Pereira, Luís; Pedronette, Daniel; dos Santos, Jefersson; Gonçalvez, Marcos; Torres, Ricardo (2015), "RECOD @ Placing Task of MediaEval 2015", In: *MediaEval 2015 Workshop.* pp. 1–3.

2014  Li, Lin; Penatti, Otávio; Almeida, Jurandy; Chiachia, Giovani; Calumby, Rodrigo; **Mendes Júnior, Pedro**; Pedronette, Daniel; Torres, Ricardo (2014), "Multimedia geocoding: The RECOD 2014 approach", In: *MediaEval 2014 Workshop.* pp. 1–2.

2011  **Mendes Júnior, Pedro**; Neves, José Maria; Taveres, Andrea; Menotti, David (2011), "Towards an automatic vehicle access control system: License plate location", In: *IEEE International Conference on Systems, Man, and Cybernetics.* pp. 2916–2921.

2010  **Mendes Júnior, Pedro**; Neves, José Maria; Menotti, David (2010), "Em rumo a um sistema automático de controle de acesso de veículos automotivos: Localização de placas de identificação", In: *WUW Workshop of Undergraduate Work, XXIII Conference on Graphics, Patterns and Image.*

## Theses

2018  **Mendes Júnior, Pedro** (2018), "Open-set recognition for different classifiers" (PhD), *University of Campinas (Unicamp).*

2018  **Mendes Júnior, Pedro** (2014), "Open-Set Optimum-Path Forest classifier" (MSc), *University of Campinas (Unicamp).*

2012  **Mendes Júnior, Pedro** (2012), "Uso de paralelismo de dados em algoritmos de processamento de imagens utilizando Haskell" (BSc; in Portuguese), *Universidade Federal de Ouro Preto (UFOP).*

## Patents

2014  **Mendes Júnior, Pedro**; Souza, Roberto; Werneck, Rafael; Stein, Bernardo; Pazinato, Daniel; de Almeida, Waldir; Penatti, Otávio; Torres, Ricardo; Rocha, Anderson, "Method for Multiclass Classification in Open-set Scenarios and uses thereof", *United States Patent and Trademark Office (USPTO).* US20160092790A1, US10133988B2. Filing date: 11/04/2014. Publication date: 03/31/2016. Issue date: 11/20/2018.

2014  **Mendes Júnior, Pedro**; Souza, Roberto; Werneck, Rafael; Stein, Bernardo; Pazinato, Daniel; de Almeida, Waldir; Penatti, Otávio; Torres, Ricardo; Rocha, Anderson, "Método para classificação multiclasse em cenários abertos e usos do mesmo", *Instituto Nacional da Propriedade Industrial (INPI).* BR102014023780A2. Filing date: 09/25/2014. Publication date: 05/17/2016.

2014  Rocha, Anderson; Torres, Ricardo; Penatti, Otávio; **Mendes Júnior, Pedro**; Pazinato, Daniel; de Almeida, Waldir; Werneck, Rafael; Stein, Bernardo, "Método para classificação automática de

visões do coração a partir de ecocardiogramas", *Instituto Nacional da Propriedade Industrial (INPI)*. BR102014011059A2. Filing date: 05/07/2014. Publication date: 12/04/2018.