Jhony Kaesemodel Pontes

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Professional Summary

Senior ML/CV engineer (10+ years across academia & industry) focused on **3D vision, reconstruction, and autonomous driving**. Shipped **production surround-view perception models using bird's-eye view (BEV) representations** under real-time constraints; published at **CVPR, ICCV, NeurIPS, CoRL**. Bridges research → product and leads cross-team initiatives.

Experience

Latitude AI | Pittsburgh, USA

Senior Software Engineer Mar 2023 – Present

- Led development of the first surround-view perception baseline using BEV, deployed onboard under real-time latency constraints for hands-free driver assist applications
- Spearheaded cross-team tech-debt cleanup across the perception stack, simplifying infrastructure, removing legacy code, and improving developer velocity
- Acted as tech lead on cross-team initiatives, coordinating design, implementation, and delivery

Argo AI | Pittsburgh, USA

Senior Research Scientist Sep 2019 – Mar 2023

- Created the **first Argoverse Stereo Dataset** and organized the CVPR 2022 Stereo Challenge, the first stereo benchmark for autonomous driving built on Argoverse Stereo
- Contributed to the **Argoverse 2** dataset release (NeurIPS 2021)
- Researched and deployed scene-flow and 3D perception methods; integrated into production with engineering teams

Meta Reality Labs | Redmond, USA

Research Intern | Research Software Engineer Jun 2018 – Jul 2019

- Developed multi-view 3D reconstruction methods for AR/VR applications (Reality Labs, Audio Team)

Renault | São José dos Pinhais, Brazil

Algorithm Engineer Mar 2012 – Jul 2015

- Designed and validated flex-fuel engine-control algorithms for production vehicles

Skills

Languages: Python (strong), C++ (familiar)

Tools: Linux, Git, Docker, Bazel, CI/CD

DL/ML: PyTorch

Deployment (familiar): NVIDIA GPUs, ONNX, TensorRT, TI TDA4, PTQ/TIDL

Education

Ph.D. in Computer Vision, Queensland University of Technology (QUT), Australia Oct 2015 – Aug 2019

"3D shape representation and reconstruction from images"

Visiting Research Scholar, Carnegie Mellon University (CMU) — Robotics Institute, 2017

M.Sc. in Electrical Engineering, Federal University of Paraná (UFPR), Brazil Apr 2013 – Dec 2014

"Hierarchical age estimation based on global and local features from facial images"

B.E. in Computer Engineering, Pontifical Catholic University of Paraná (PUCPR), Brazil Feb 2007 – Dec 2012
Exchange Program, Czech Technical University (CTU), Czech Republic, 2010 – 2011

Selected Publications

[1] Benjamin Wilson, Nicholas A. Mitchell, **Jhony K. Pontes**, James Hays, *What matters in range view 3D object detection*, CoRL, 2024
[2] Xueqian Li, Jianqiao Zheng, Francesco Ferroni, **Jhony K. Pontes**, Simon Lucey, *Fast neural scene flow*, ICCV, 2023
[3] Chaoyang Wang, Xueqian Li, **Jhony K. Pontes**, Simon Lucey, *Neural prior for trajectory estimation*, CVPR, 2022
[4] Benjamin Wilson *et al.*, *Argoverse 2: Next generation datasets for self-driving perception and forecasting*, NeurIPS, 2021
[5] Xueqian Li, **Jhony K. Pontes**, Simon Lucey, *Neural scene flow prior*, NeurIPS, 2021
[6] **Jhony K. Pontes**, James Hays, Simon Lucey, *Scene flow from point clouds with or without learning*, 3DV, 2020

Full list available on Google Scholar

Patents

- "Multi-sensor and multi-task 3D detection," patent filed, 2024
- "Fuel supply system for internal combustion engines," Renault, granted patent FR3043722A1, 2017

Awards

Supervisor Top-Up Ph.D. Scholarship | QUT, 2018–2019
Science Without Borders Scholarship | Ministry of Education of Brazil, 2015–2019
Erasmus Mundus EuBrazil StartUp Scholarship | European Commission, 2010–2011