PHILIPPE BURLINA
LinkedIn contact | DC Area | PhD EE | US Citizen

SUMMARY Senior Staff–level individual contributor and technical leader with 20+ years experience spanning autonomous systems, computer vision, machine learning, and healthcare AI. Most recently an L7 IC at Zoox (Amazon), developing tools and leading cross-functional engineering efforts across perception, simulation, and planner/prediction teams. Expertise includes multimodal detection, self-supervised and foundation models, generative AI for autonomy/healthcare data, AI robustness and assurance, low-shot learning, anomaly detection, adversarial ML, LLM attacks, and AI privacy. Proven record of scaling engineering teams (up to 25+) and building production-grade ML systems and tools.
Publications: https://scholar.google.com/citations?hl=en&user=R2WeuqAAAAAJ&sortby=pubdate

WORK EXPERIENCE

ZOOX (Amazon) — Foster City, CA (remote from DC area)

L7 Senior Staff Software Engineer | May 2022 – Oct 2025

- Performed full cycle deployment of on-vehicle mission critical detection systems (data mining, model coding and training, metrics evaluation, and production integration)
- Led cross-functional engineering teams delivering perception and planner systems for autonomous vehicles addressing high-risk, long-tail object detection (e.g., animals, prone humans)
- Designed and implemented foundation models for vehicle autonomy full stack
- Built generative models for synthetic asset generation used in training / testing of autonomy stack
- Defined and developed tools, metrics and methodologies for trust, validation, and robustness of generative assets in safety-critical ML autonomy and simulation pipelines

Johns Hopkins University Applied Physics Laboratory (APL) — Laurel, MD
Principal Scientist, Intelligent Systems Center | Jan 2012 - May 2022

- Technical and people lead for ML and computer vision programs focused on robustness, fairness, privacy, and adversarial ML
- Developed methods for:
    - Zero-shot and low-shot learning
    - Anomaly and novelty detection
    - Distributional shift and dataset imbalance
    - AI Privacy auditing and defense in vision systems
    - Generative models for controllable data synthesis and semantic disentanglement
    - Applications to recognition, healthcare imaging, and autonomy

EARLIER LEADERSHIP ROLES

Johns Hopkins University Applied Physics Laboratory (APL) — Laurel, MD
Section Supervisor, Intelligent Systems Center | 2004 - 2012

- Line manager and technical lead for engineers teams (incl. PhD/MS/BS)
- Led ML/CV projects across multiple applied domains (Healthcare, DOD)

FileNet (IBM) — Costa Mesa, CA
Director, Enterprise Software Development | 2002 - 2004

- Led a 25+ SWE. team delivering enterprise content management, workflow, and authentication
- Defined architecture, SDLC processes, testing strategies, and product roadmaps
- Customers included Vodafone (UK, Italy, Netherlands), Vivendi, Sigma-Aldrich, and others

eGrail — Bethesda, MD
Vice President of SWE | 2000 - 2002

- Grew software engineering team from 3 to 25+ developers
- Platform re-implemented from LAMP to Java EE
- Company acquired by FileNet (later IBM)

ImageCorp, Inc. — Greenbelt, MD
Co-Founder / Technical Lead | 1997 - 2000

- Designed ML and computer vision systems for government and industry, including early autonomy applications
- Company acquired by SAIC

TEACHING

Taught graduate-level deep learning and computer vision courses at Johns Hopkins University and designed large-scale programs to upskill ~100 engineers per session into ML engineers at Zoox

EDUCATION

Ph.D., and M.S. Electrical Engineering — University of Maryland, College Park

- Computer Vision Lab
- Dissertation: Computer vision algorithms for autonomous vehicle navigation
- Advisor: Prof. Rama Chellappa

B.S., Computer Science (Diplôme d'Ingénieur) — Université de Technologie de Compiègne, France

- Exchange year: **University of Pennsylvania, Moore School of Engineering**

TECHNICAL SKILLS & DOMAIN EXPERTISE

Machine Learning & Vision:
Autonomous driving, perception, deep learning, foundation models, generative models, self-supervised learning, anomaly detection, adversarial ML, AI privacy, AI assurance, robustness, image/video analysis, biomedical imaging, autonomous systems
Programming & Frameworks:
Current/Primary: Python, PyTorch, OpenCV, ML/data science tools, Databricks
Prior: C/C++, MATLAB, Java, PHP, Mathematica
Systems & Infrastructure:
SDLC, Git, code review, Agile
Enterprise platforms, content management, workflow engines. Databases: MySQL, MS SQL, Oracle, RDBMS
Languages: Fluent in English, French, and Italian, decent Spanish and German

PUBLICATIONS
h-index=44, 7500+ citations total, 800+ in 2025
https://scholar.google.com/citations?hl=en&user=R2WeuqAAAAAJ&sortby=pubdate

PATENTS
https://patents.google.com/?inventor=philippe%20burlina&sort=new

INVITED TALKS, PROFESSIONAL SOCIETIES, SERVICE, ORGANIZATION

Invited and Keynote presentations: 2021 U Maryland, 2021 U Louisiana, 2020 Stanford CCOI, 2018 DRCR, 2018 APTOS, U. Kyoto (2018) and U. Nagoya (2018).
Workshop organization: Co-Organizer 2022 ECCV workshop on adversarial machine learning; Co-organizer: 2022 MICCAI workshop on trusted AI. Co-Organizer 2021 ICCV workshop on AML; Chair: 2018 AIRIA Workshop on Artificial Intelligence applied to Retinal and Medical Image Analysis, held under the Asian

Conference on Computer Vision (ACCV), Perth, Australia.
Technical reviewer: for various machine vision and machine learning technical journals and conferences including IEEE T. PAMI, IEEE T. MIA, IEEE T. IP, IEEE T. GRS, NeurIPS, MICCAI, ISBI, CVPR, ICCV; NIH Biomedical Imaging Technology Study Section member.
Societies: IEEE Senior Member.