

Douglas Gray

Principal Applied Scientist

ABOUT

Research scientist who has led teams and shipped at global scale: the vision-language systems behind Amazon Lens and visual navigation features in Amazon product search reach hundreds of millions of customers. I believe world-model-grounded, full-duplex interfaces are where computing is heading, and want to work on the hardest problems to get there: multimodal reasoning, agentic retrieval, generative models, and real-time interfaces.

SELECTED PUBLICATIONS & SERVICE

5,200+ citations · h-index 21 (19 since 2021) · Google Scholar · Reviewer: CVPR, ICCV, ECCV, WACV

- Co-organizer, Multimodal Representation and Retrieval Workshop (SIGIR 2024, ICCV 2025).
- GENIUS: A Generative Framework for Universal Multimodal Search, CVPR 2025
- Bringing Multimodality to Amazon Visual Search System, KDD 2024
- Amazon Shop the Look: A Visual Search System for Fashion and Home, KDD 2022
- Hierarchical Proxy-Based Loss for Deep Metric Learning, WACV 2022
- Viewpoint Invariant Pedestrian Recognition with an Ensemble of Localized Features, ECCV 2008 (1,953 citations)
- Evaluating Appearance Models for Recognition, Reacquisition, and Tracking, PETS 2007 (1,380 citations)

SELECTED PATENTS

Named inventor on 40+ patents in computer vision, visual search, and camera/AR systems.

EDUCATION & WORK HISTORY

Principal Applied Scientist Amazon Visual Search 2025–Present

- Led Lens Live as principal technical lead — real-time visual search integrated with Rufus for product insights, deployed to tens of millions of customers.
- Architected the mobile ML pipeline (on-device detection, tracking, and state management) enabling continuous low-latency product identification as customers scan; coordinated development across multiple VP orgs in four locations.

Senior Manager, Applied Science Amazon Visual Shopping 2020–2025

- Led a team of up to 20 applied scientists and engineers; completed the transformation of Amazon Lens into a deep learning, embedding-based system matching against over 1 billion products, driving significant gains in CTR and usage.
- Launched Visual Search Suggestions, multimodal search (image + text reformulation), and More Like This — growing the latter from zero to over 90% of Amazon search result pages.
- Built and developed a high-performing research team across all levels; organized Amazon’s Computer Vision Conference (ACVC, 200+ attendees) and co-organized the Multimodal Representation and Retrieval workshop (MRR) at SIGIR and ICCV as lead organizer and advisor.

Manager, Applied Science Amazon Visual Search & AR 2016–2020

- Led a team of up to 12 applied scientists and engineers; introduced deep learning to Amazon’s visual search stack from scratch — from first launch at ~100 categories, expanding to 100,000+ fine-grained search strings via query-log-trained models, then to instance-level matching against ~10M products — culminating in StyleSnap (2019) and StyleSnap for Home (2020).

Applied Scientist A9.com Visual Search 2011–2016

- Early applied scientist on A9’s visual search team; built A9 Flow (AR-based multi-object product recognition and tracking, initially a standalone demo app), with the underlying recognition, tracking, and scene text/OCR libraries later integrated into both the Amazon mobile app and the Amazon Fire Phone. Also developed video content alignment tools that automated annotation workflows for the IMDB X-Ray feature. Classical CV in high-performance C++.

Research Scientist Akiira Media Systems, Palo Alto 2010–2011

- Research scientist at an early-stage computer vision startup; built a video content search engine and developed multimedia summarization products — automated news article summarization and story clustering, and a video summarization API — using SVD of hand-crafted features.

B.S. / Ph.D. Candidate (ABD) Computer Engineering, UC Santa Cruz 2001–2010

- Proposed: Privacy Preserving Pedestrian Recognition; advanced to candidacy 2008. Collected the VIPeR benchmark dataset for person re-identification; two publications from this period have accumulated 3,300+ combined citations.