ALEXANDRE R. SATHLER

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Summary: Pioneering data engineer and machine learning researcher with 5 years' experience in tool and pipeline development for healthcare and biomanufacturing by developing 96% accurate AI models and reducing analytical timelines by 90%. Collaborative leader with 3 years' experience driving organizational growth through 70X increase in marketing engagement and non-profit development through first-ever revenue generation.

SKILLS:

Business: Product development · Monday · Jira · grant writing · email marketing · social media marketing · venture research · event planning · Portuguese · French · Spanish (beginner)

Technical: Python · C++ · AI · machine learning · computer vision · TensorFlow · PyTorch · OpenCV · Jupyter · Vertex AI · Lightning AI · TensorRT · ONNX · Slurm · HPC · Qt

WORK EXPERIENCE:

ML Research Engineer **2024-Present**
Business Development Associate
Phi Optics, Inc – Chicago, IL

- Engineered a C++/Qt-based minimum viable product integrating quantitative phase imaging (QPI) with 95%-accurate cloud-based PyTorch/Detectron2 segmentation models for data-driven and imaging-based bioprocess control workflows that reduce waste in cell-based chemical and pharmaceutical manufacturing.
- Led venture research on novel QPI- and AI-based solutions for pharmaceutical manufacturing and precision fermentation applications, driving investment opportunities in a $1.5 billion market.
- Managed email, social media, and in-person marketing campaigns, launching bi-monthly initiatives that increased email opens by 1.5x, click-through rates by 70x, and established 3 OEM partnerships.
- Updated user manuals for flagship microscope software and initiated a global customer feedback campaign, engaging clients across 4 continents.

Computer Vision & Neurobiology Research Fellow **2022-2024**
National Institutes of Health (NIH) – Bethesda, MD

- Developed a first-of-its-kind Python-based TensorFlow/Inception-Unet machine learning model capable of distinguishing between key neurodegenerative DNA phenotypes with 96% accuracy and 88% intersection-over-union, uncovering previously hidden aging-associated changes in DNA sub-phenotypes.
- Implemented high-throughput cloud-based computing pipelines for processing Airyscan super-resolution confocal images, reducing analytical timelines by 90%.
- Initiated and led NIH fellows' community town halls during a generational facilities crisis, driving management to improve disaster recovery communication and safety, with contributions recognized in a Director-led annual awards ceremony.

Research Assistant – Image Analysis & Biochemistry **2020-2022**
Oregon State University (OSU) – Corvallis, OR

- Authored a novel Python/Matplotlib-based image normalization and visualization pipeline for confocal images of 3D samples, eliminating a 50% decline in signal intensity and expanding applications in cell biology, pathology, and tissue modeling.

OTHER EXPERIENCE:

Trustee, Capital Development Chair **2022-Present**
The DMV Petri Dish – Bethesda, MD

- Managed a cross-functional team executing a feasibility study to justify a $100k award from the State of Maryland to build the first community lab in the DC Metro Area (DMV)
- Spearheaded two 10-speaker seminar series and organized educational workshops, establishing the organization's first revenue streams, and achieving 100% growth in income.

Founder and President **2022-2024**
OITE Biotech Interest Group – Bethesda, MD

- Founded and led a biotech industry-focused professional organization, addressing a critical need by providing training in non-academic career development to over 5,000 NIH fellows.
- Orchestrated impactful seminar series, workshops, and networking events in collaboration with OITE and researchers nationwide to fostering professional growth and industry connections among 500 attendees.
- Cultivated a leadership succession plan and trained a successor, maintaining organizational stability continuing professional development of NIH fellows beyond term of presidency.

FELLOWSHIPS & SCHOLARSHIPS:

George T. Abed Award OSU **$3,000** **2022**
Competitive yearly award for an Acacian exhibiting exceptional leadership, scholarship, and community service.

CURE Summer Fellowship OSU **$5,000** **2021**
Competitive research grant from OSU's College of Science for carrying out a proposed summer research project.

Merrill Family Foundation Scholarship OSU **$4,500** **2020**
An OSU College of Science competitive scholarship awarded to students embodying service and leadership.

HONORS & AWARDS:

Spirit of NINDS Award NIH/NINDS **2023**
"In recognition of invaluable insights and recommendations for program enhancement, contributing to improved working conditions, training and mentorship opportunities, and a positive workplace culture."

Young Investigator Award (Oral Talk) SfRBM **$250** **2021**
Delivered first-ever undergraduate oral presentation at any SfRBM Annual Meeting.

Best Lightning Talk & Undergraduate Poster CQLS **2021**

Eagle Scout Boy Scouts of America **2018**

EDUCATION:

B.S: Biochemistry & Molecular Biology (Data Science Minor) **Oregon State University – 2022**

A.A.S: Bioscience Technology **Portland Community College – 2020**

CERTIFICATIONS:

Nanodegree: Generative AI **Udacity – In Progress**

Nanodegree: Machine Learning with TensorFlow **Udacity – 2020**