Nicholas P. Dana, PhD

Entrepreneur, Collaborator, AI & Cross-Industry Innovator

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SUMMARY (Updated Nov. 2025)

Innovative data scientist and engineer integrating advanced analytics, machine learning, and computational imaging to accelerate scientific discovery and product innovation. Proven leader in building scalable data systems, automating complex pipelines, and translating R&D breakthroughs into operational tools that drive value across technology sectors.

EXPERIENCE

Elephas Biosciences — *Principal Data Scientist & Developer*

June 2021 – Present | Remote / Madison, WI

- Architected and deployed **multi-modal analytics pipelines** in cloud-integrated ML workflows leveraging image, cytokine, and assay data to predict drug response in *ex vivo* tumor models.

- Co-authored multiple conference & BioRxiv publications advancing translational oncology (**see below**).

- **Leadership Impact**: Technical lead for SME group (8) developing custom analytics achieving **>96% training data accuracy** and **100% concordance** with validation samples.

- **Strategic Initiative**: Prototyped analytic methods leading to company's first lab derived test offering.

- **Strategic Initiative**: Led SME group (6) identifying key QA/QC metrics, significantly improving QNS assessment while improving downstream analytic accuracy

StellarPro.co — *Co-Founder & Technical Director*

2021 – Present | Remote / Denver, CO

- Co-founded a digital health platform connecting specialized clients with certified mental-health and medical practitioners.

- Developed early matching and recommendation algorithms based on user intent, therapy specialization, and practitioner credentials.

- **Leadership Impact**: Led a team (4) developing platform architecture, while addressing data integrity, privacy, and UX concerns.

GeoVisual Analytics — *Computer Vision & Machine Learning Scientist*

2018 – 2021 | Boulder, CO

- Built and trained **deep-learning CV models** for agricultural analytics using UAV imagery.

- Developed crop maturation and yield forecast models integrating image, weather, and GIS data.

- **Quantifiable Result**: Achieved **0-day median error** in harvest date prediction and **<5% error** in crop yield estimation across production sites.

Essen BioScience (Sartorius) — *Algorithm Engineer*

2016 – 2018 | Ann Arbor, MI

- Designed and implemented segmentation and denoising algorithms enabling automated live-cell image analysis with minimal user input.

- **Quantifiable Result**: Developed a computer vision library for time-series imaging, achieving **99.5% data fidelity** at **14× probabalistic compression efficiency**.

EDUCATION

Doctor of Philosophy, Biomedical Engineering

The University of Texas at Austin, 2016

Dissertation: *Photoacoustic Imaging for Tissue Characterization and Image Guidance in Cardiovascular Applications*

Bachelor of Science, Physics

University of Utah, 2010

Focus in Medical Physics, Mathematics and Chemistry

SELECTED PUBLICATIONS

- Dana N. *et al.*, **"A cytokine-based classifier to predict response to immunotherapy using an *ex vivo* live tumor fragment platform"** [Working title, Manuscript in preparation].

- Dana N. *et al.*, **"Development and characterization of cytokine-based classifiers to predict response to immunotherapy using an *ex vivo* live tumor fragment platform"**, *SITC 2025 Poster*.

- Ramasubramanian T.S. *et al.*, **"A live tumor fragment platform to assess immunotherapy response in core needle biopsies,"** *bioRxiv*, July 2025.

- Dana N. *et al.*, **"Optimization of dual-wavelength intravascular photoacoustic imaging of atherosclerotic plaques using Monte Carlo optical modeling"** *JBO* 2017.

- Dana N. *et al.*, **"Overview of Photoacoustic Imaging"**, *Advances in Medical Physics*, 2016 edition.

TECHNICAL SKILLS

Languages: Python, SQL, C++, C#, R, MATLAB, Docker

ML / Data Science: PyTorch, Tensorflow, Scikit, Pandas, Bayesian Modeling, Dimensionality Reduction, Computer Vision

Systems & Tools: Linux, Git, CI/CD, Cloud-based container orchestration

Domain Expertise: Optical imaging, assay analytics, bioinformatics, agricultural AI, and computational modeling