Sai Kiran Kumar Nalla

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SUMMARY

Doctoral Researcher and medical technology specialist with over 2 years translational R&D experience at med-tech startups and hospitals. Experienced in translating clinical needs into actionable solutions, with exposure to product validation and cross-functional collaboration. Highly motivated to apply scientific expertise and analytical thinking to Life-Sciences strategy, healthcare innovation ventures

EXPERIENCE

Doctoral Researcher (Full-Time)
Institute universitaire du cancer de Toulouse - Oncopole (Hospital)
Oct 2023 – Sept 2026, Toulouse, France
Direction: Olivier Caselles, PhD (IUCT Oncopole & Tachyons), John Kennedy, PhD (Rambam Health Care Campus)

- **Industry Clinic Collaboration:** Executing a cross-functional multi stakeholder project with eMotion, GE Healthcare & Mahindra University
- **Technical Development:** Developed computational models and 3D-printed phantoms to simulate complex clinical scenarios on PET/CT
- **Clinical Research:** Conducting a retrospective clinical dataset on Dynamic PET, creating expanded data libraries from limited sets
- **Commercial Valorisation:** Engaged with Toulouse Tech Transfer to evaluate IP strategy and commercial exploitation of scientific results
- **Scientific Leadership:** Contributed to project proposals, collaboration agreements, scientific production, Master-level course and supervision of junior interns.

Researcher (Consulting) and Research Intern (Full-Time)
Hepta Medical (Deep tech Start-up)
Dec 2022 – Sept 2023, Suresnes, France
Supervision: Thomas Bancel, PhD (CEO, Hepta Medical)

- **Product Development Support:** Developed predictive models for a minimally invasive cancer treatment device, directly supporting deep-tech startup's core R&D roadmap and pre-clinical validation.
- **Executive Support:** Developed automated tools to translate complex R&D data into clinical visualizations used for investor demonstrations

Preclinical Intern (Full-Time)
Direction Research Innovation Et Formation, Hospital Saint Joseph
May 2022 – Jul 2022, Robinson, France
Supervision: Dr. Sebastien Hascoets; Dr. Clement Batteaux

- **Translational Design:** Translated complex anatomical data into 3D-printed based patient-specific simulation bench to facilitate pre-operative planning.
- **Clinical Observational Research:** Shadowed interventional cardiologists to observe live surgical procedures and identify logistical bottlenecks and unmet clinical / market needs.

Research Intern (Full-Time)
LadHyX, École Polytechnique
Mar 2022 – May 2022, Palaiseau, France
Supervision: Gabriel Amselem, PhD; Charles Paul Moore, PhD

- **Pharmaceutical Application Research:** Conducted experiments on soft gels and particle suspensions to evaluate their potential as models for drug delivery systems.
- **Automated Data Pipeline:** Developed automated tools for the simultaneous tracking and analysis of image data, significantly accelerating the synthesis of experimental results.

Design Project Associate (Part-Time)
Manitty (Deep tech Start-up)
Nov 2021 – Sept 2022, Palaiseau, France
Supervision: Philippe Blasquez (CEO, Manitty)

- **Market & Scientific Intelligence:** Conducted comprehensive market mapping of existing electrode technologies, facilitated by monthly briefings with the CEO
- **Prototyping & Characterization:** Designed and characterized polymer electrodes using advanced microscopy and spectroscopy
- **Commercial Viability Assessment:** Evaluated prototypes on scalability, manufacturing logistics and cost effectiveness

Project Partner / Associate (Part-Time)
École Polytechnique
Oct 2021 – Jun 2023, Palaiseau, France
Supervision: Abdul Barakat, PhD (Director, E4H & BME Master, École Polytechnique); Alexandra Haugel, PhD

- **Translational Modelling:** Translated complex clinical datasets (4D MRI from TEVAR - Thoracic Endovascular Aortic Repair procedures into high-fidelity in-silico models to conduct simulation studies on
- **Pharmaceutical Simulation:** Performed simulations to study new drug carriers for targeted therapeutic release.

Research Associate (Full-Time)
Mahindra University
Aug 2020 – Sept 2021, Hyderabad, India
Supervision: Sebastian Uppapalli, PhD

- **In-Silico Research:** Performed computational simulations on behaviour of embolisms in blood Drafted comprehensive scientific articles and project proposals
- **Leadership & Mentorship:** Supervised and mentored student groups within technical clubs, overseeing project lifecycles, resource allocation, and technical skill development.

EDUCATION

PhD in Medical Imaging and Radiophysics ***(Ongoing)***
Université de Toulouse
10/2023 - 09/2026 *Toulouse, France*

MSc in Biomechanical and Biomedical Engineering
(Full Scholarship – Admitted to PhD Track)
École Polytechnique, Institut Polytechnique De Paris
10/2021 - 09/2023 *Palaiseau, France*

B. Tech in Mechanical Engineering ***(Excellence Scholarship)***
Mahindra École Centrale - (Now Mahindra University)
08/2016 - 08/2020 *Hyderabad, India*

SKILLS

Technical:
MATLAB (Advanced); Python (PyTorch, NumPy, SciPy, Tensorflow); Image Analysis (3D Slicer, ITK snap, Image J); Data analysis (R studio, JASP); Numerical Modelling (COMSOL, Star CCM+, ANSYS), 3D Design (Fusion 360), 3D Printing (Cura, Chitubox)

Translational:
Workflow mapping & Stakeholder ideation (Miro, Notion), Patent Analysis (Espace net, Google Patents), Project management (MS Project)

Design & Documentation: Microsoft Office (Word, Excel, PowerPoint, SharePoint), Scientific illustration (InkScape, Gimp, iMovies, Autodesk mesh mixer), Technical reporting (LaTeX), Bibliography management (Mendeley, Zotero)

LANGUAGES

- English (C1, PROFICIENT ,TOEIC 945 / 990)
- French (B1-B2 ; UPPER INTERMEDIATERY)
- Hindi (C1, PROFICIENT)
- Telugu (Maternal)

WORKSHOPS & CERTIFICATIONS

Venture Capital Introduction
Newtons Foundation (Sept 2025)
Training on introduction to tech investment frameworks, technical due diligence, startup valuation, and the lifecycle of venture-backed innovations.

McKinsey Forward Program
McKinsey, Online (Oct 2025)
Focused on structured problem-solving, data-driven communication, and cross-functional leadership in digital environments.

European Cross Border Doctorial 2025
University of Montpellier, Aigues-Mortes (Oct 2025)
3-day workshop on to structure a European scientific project focused on key societal challenges. Hands on Pitch deck, valorisation & IP strategy for TRL improvement

Introduction to entrepreneurship
Incubator IMT Mines Albi (Dec 2024)
1-day workshop on process of setting up a company & engagement with some deep tech start-up founders

From Research to Market
SATT Paris Saclay & Engineering for Health – E4H (Feb – Jun 2023)
Monthly workshop on valorisation and commercialization of research innovation into Deep tech ventures

Coursera: *Deep Learning Specialization, AI for Medicine Specialization*

SCIENTIFIC COMMUNICATIONS

Enhancing PET/CT target assessment with porous 3D printed grids: a pilot study.
Physical and Engineering Sciences in Medicine (2025)
https://doi.org/10.1007/s13246-025-01687-y

From Digital File to Transferable Phantom: A Dual-Centre Evaluation of Multi-contrast Phantom for Standardized PET Quantification
MedRxiv (2025) – Pre-print (Under Review)
https://doi.org/10.1101/2025.05.30.25328639

Quantitative Reality: A Physical Ground Truth to Assess Heterogeneity Beyond Visual Limits in Molecular Imaging
MedRxiv (2025) – Pre-print (Under Review)
https://doi.org/10.1101/2025.11.26.25341036

MuPET (Multiphysics PET): Bridging Computational Mass Transport Physics and Medical Imaging for Synthetic Positron Emission Tomography Data Generation
MedRxiv (2025)
https://doi.org/10.1101/2025.07.31.25332512

3D Printed PET/CT Phantom with Mixed Target Uptake Characteristics to Investigate Lesion Development
European Association of Nuclear Medicine Congress (2025)
e-poster(EP-0949): Technical Studies/ Quality Control Performance and Standardization

Effects of Gas Embolism on Pulsatile Flow Characteristics Within a Human Carotid Artery
Journal of Biomechanical Engineering (2022)
https://doi.org/10.1115/1.4054679

VOLUNTEERING & HOBBIES

Deputy Team Lead & Mechanical Subdivision Lead
Autonomous Underwater Vehicle Student Club, MEC (2019-2020)
Responsible for creation of new club, managing finances, logistics (Logo Design, Inventory, social media engagement, TV interview and News articles) and personnel mentorship (15 associate members, 10 Junior members)

Internship & Placement Cell Member, MEC (2018-2020)
Responsible for organising industrial collaborations, visits and internships, Financial and resource management, logistical planning

Strategy & Gaming: Biweekly player of complex strategy and negotiation board games (e.g., Eclipse, Cosmic Encounter, Skull, Sherlock.. etc)

Travel & Culture: Explored **10+ countries** across Europe and Asia; focused on "slow travel" to understand local structures and diverse perspectives.

Creative Writing: Hobbyist writer of **short speculative fiction**; enjoy the process of world-building and narrative development as a creative outlet.

Culinary : Enthusiast of **fusion cooking** and experimental techniques; enjoy hosting dinners to bring together diverse groups of friends and colleagues.

Physical Performance: Dedicated to **cycling** and **gym strength training**; focus on personal discipline