

Elakiya Sivakumar

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EDUCATION

COLUMBIA UNIVERSITY

M.S. in Biomedical Engineering, GPA: 3.7/4.0

New York, NY

Aug 2022 - Dec 2023

- Concentration: AI and Design, Innovation and Entrepreneurship
- Leadership: Board Member, NYCEDC/LifeSci NYC Alumni

SSN COLLEGE OF ENGINEERING

B.E. in Biomedical Engineering - Neuroengineering, GPA: 8.8/10.0

Chennai, India

Aug 2018 - May 2022

- Graduated top 5% of class and Awarded Meritorious student award for Academic Excellence
- Leadership: Theater Club President, BME Newsletter Editor, SSN MUN Executive Board Director

WORK EXPERIENCE

NEW MARKETS ADVISORS

Boston, MA

Associate Consultant, Innovation and Strategy (Product Development)

Jan 2024 - Present

- Led the Generative Artificial Intelligence practice, focusing on leveraging latest AI technologies to improve internal project operations and address consumer pain points.
- Led market analysis and user research for a \$2B new product introduction project into the wellness industry, with insight into scientific background and US FDA-regulations.

PROTARA THERAPEUTICS

New York, NY

Analyst, Corporate Development (New Product Introduction)

May 2023 - Dec 2023

- Conducted scientific and market research on 100+ companies in oncology with less than \$1B market cap, providing strategic asset recommendations to executive leadership for new drug-asset acquisition.
- Developed go-to-market strategies for a \$23B rare diseases asset's market entry, incorporating physician insights to ensure the solutions met current clinical needs and regulatory standards.

INSIM SURGICAL, COLUMBIA UNIVERSITY

New York, NY

Head, Product Strategy Lead (Research and Development Engineer)

Sep 2022 - Dec 2023

- Developed an AI-driven posture training tool for surgeons, achieving 80% user compliance and closely following ISO and FDA guidelines for Class 2 devices, reducing \$15M in losses from musculoskeletal disorders in surgeons.
- Implemented real-time video analysis AI algorithm to detect posture imbalance based on clinical guidelines for surgeon ergonomics with emphasis on angle, duration of muscle strain followed by recommendation of relaxing stretches.
- Led collaboration with a cross-functional team of surgeons, engineers, sales teams and pain experts to understand need, design, and proof-of-concept test devices through planning product roadmap, handling budgeting and scheduling.
- Explored market entry opportunities for a \$1.5B market, performing competitive landscape analysis and developing business models that addressed specific customer pain points and regulatory requirements.

SIA LAB, COLUMBIA UNIVERSITY

New York, NY

Research Associate (Software Engineer)

Jan 2023 - Aug 2023

- Developed an automated user interface to optimize the implementation and analysis of infrared microscope images of calcium-detecting hydrogel patches, increasing efficiency by 25%, based on researcher feedback and animal study insights.
- Developed and integrated pipelines for image data acquisition, data storing, preprocessing and analysis using deep learning neural networks.
- Improved patient data security by revising front-end patient records frameworks in collaboration with senior researchers.

SSN RESEARCH LABS, SSN COLLEGE OF ENGINEERING

Chennai, India

Research Associate (Research and Development Engineer)

Jan 2021 - Dec 2023

- Designed and implemented Generative Adversarial Networks (AI algorithm) to increase the number of images in a spine image dataset by 159% to boost performance of traditional deep learning models on medical data.
- Analyzed several AI algorithms in collaboration with physicians to classify breast cancer data to assist diagnosis at point-of-care and published a research article in an international conference with the findings.
- Designed and implemented a 2D image conversion algorithm of time-variant brain signal (EEG) data into images to utilize traditional convolutional neural networks for predicting mental task overload.
- Designed robust filtering systems for bio-signal acquisition systems, to reduce signal to noise ratio of the collected data and improve diagnostic accuracy following ISO and FDA guidelines for Class 2 devices.

RECOGNITION

- **Columbia Entrepreneurial Fellowship:** Awarded to 3 out of 30,000 students for entrepreneurial spirit.
- Selected into the alumni **advisory board** for outstanding leadership and contributions to **Life Sciences NYC**.
- **First-author of published research papers** on Deep learning (AI) solutions for point-of-care diagnostics, including the development and implementation of models to automate spine-defect and breast cancer diagnoses.

SKILLS

Analytical: Python, Deep Learning, Data Visualization, MS Office, Power BI, Data Analytics, QMS

Engineering: AutoCAD, Laser Cutting, 3-D Printing, Python, C++, Java, Matlab, MultiSim SolidWorks, Figma, Labview

Soft-Skills: Communication, Time management, Cross-functional Collaboration