



MISTI

MIT Global Experiences

MISTI.MIT.EDU

Health Opportunities
Information Session

MISTI Health Impact Area Co-Leads



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MISTI MIT Global Experiences

Agenda

- **What is MISTI?**
- **Requirements and Application Process**
- **Hear from past MISTI Health Interns**
- **Internship Opportunities**

The **MISTI** model

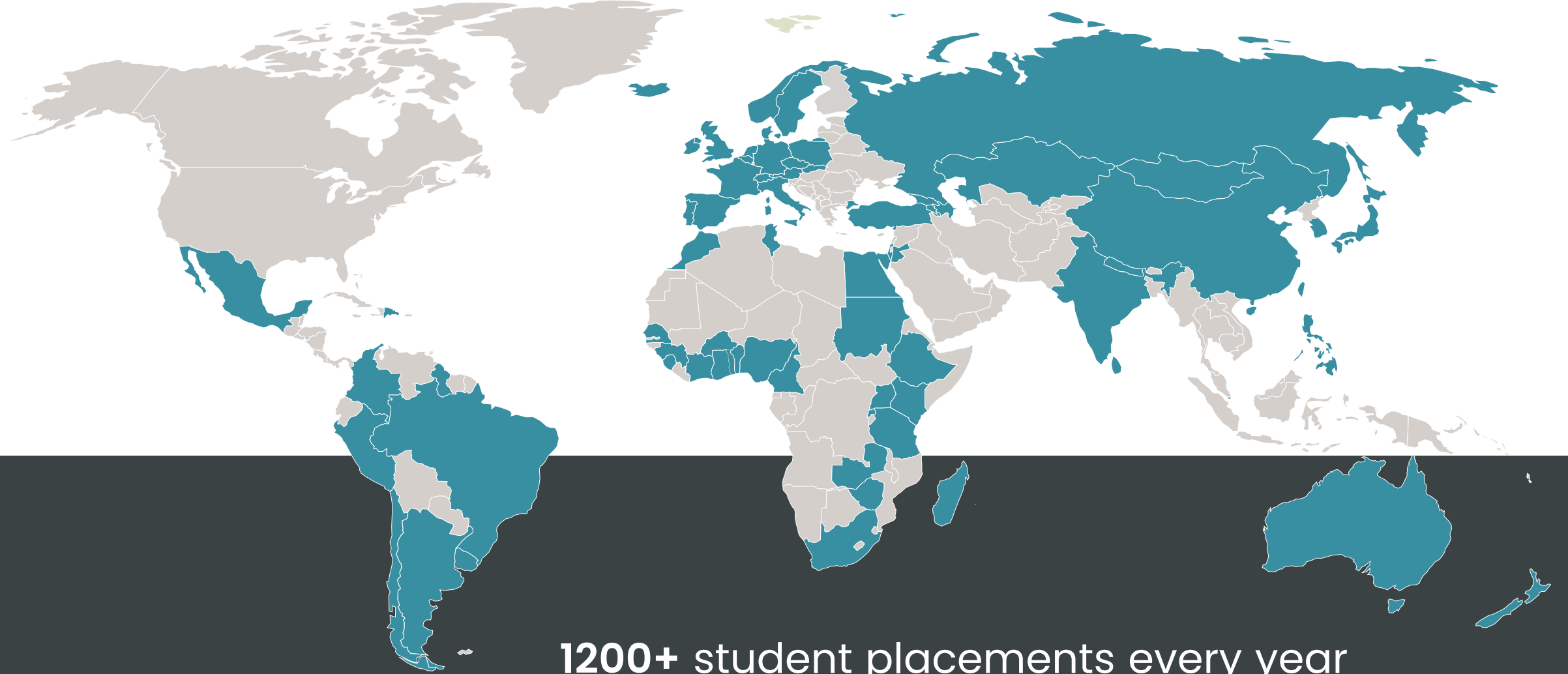
“MIT is a community eager to solve hard problems in service to the nation and the world.”

—MIT President L. Rafael Reif

Cultivate future
global
changemakers

Promote faculty
international
research
collaboration

Connect MIT with
international
partners



1200+ student placements every year
through **25 regional** programs
Faculty collaborations and partnerships
in over **75** countries

Africa

Arab World

Australia & New
Zealand

Belgium

Brazil

Chile, Peru, & Uruguay

China

Denmark & Scandinavia

France

Germany

India

Israel



**MISTI
Programs**

Italy

Japan

Korea

Mexico & Colombia

Netherlands

Portugal

Russia & Eurasia

Singapore

Spain

Switzerland

Ukraine

United Kingdom

MISTI programs for students & faculty

1200+ student
placements each year

75% UGs / 25%
graduate students

Internships

Teaching

Study

120+ faculty
projects each
year

Global Seed Funds
(GSF)

MISTI resources to enable global learning

- **Funding:** Placed students receive a basic living stipend for airfare, food and accommodation. *MISTI is a cost-neutral program.*
- **Preparation:** Prior to departure, students attend MISTI prep & training sessions. These mandatory training sessions address topics in history, culture, health & safety, as well as practical information about living in your host country.

Requirements & eligibility

- MISTI is open to MIT undergrads, graduating seniors and graduate students in all disciplines that meet program requirements
- GPA 4.0 or better

Some programs require:

- Relevant experience (such as a UROP) prior to acceptance
- Host country language (varying levels based on the expectations of need in that country)
- Culture course
- Faculty letter of recommendation

Application process and timeline

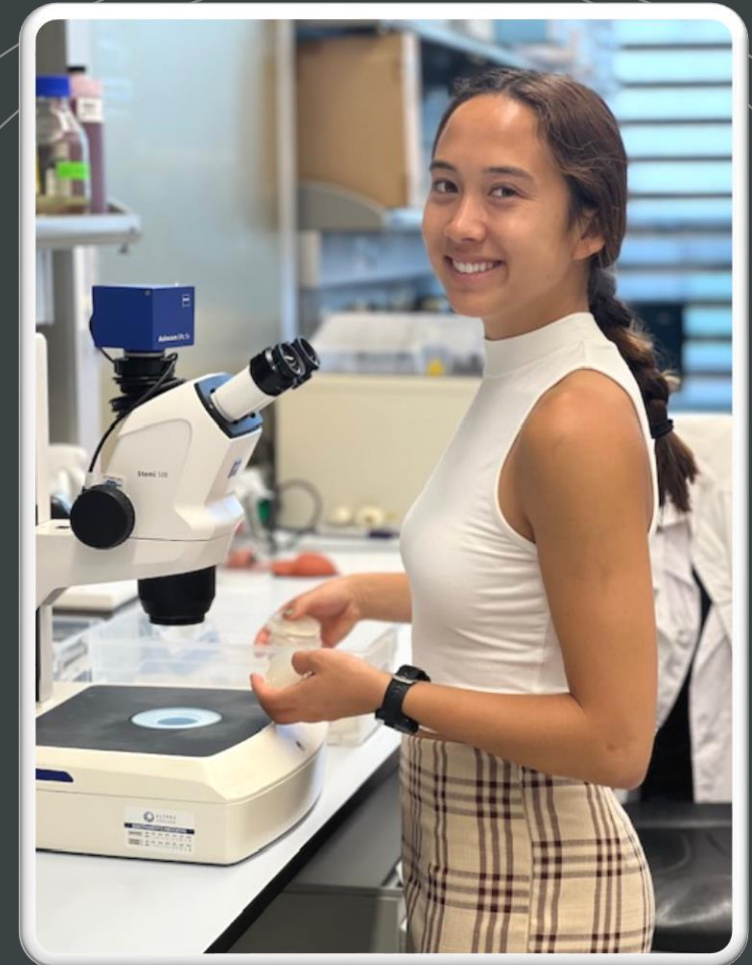
- Complete MISTI Launchpad Application – some programs have deadlines as early as December 1st
- Interview with Country Program Staff – You schedule this as part of your application and can meet with MISTI as soon as MISTI Launchpad is complete
 - You can identify up to 3 countries/programs of interest in your application
- Confirm your decision to commit to the program via email
 - You will receive more information about potential next steps if accepted
- Complete the County-Specific Application – this may include a personal statement and your letter of recommendation
- Internship matching process
- Mandatory pre-departure sessions and guidance through logistics

HEALTH

Through internships and research opportunities, MISTI Health Impact area students are active participants in tackling the most pressing health challenges around the world. Working on projects ranging from developing cancer-detecting devices to connecting prosthetic sockets with custom prostheses, MIT students are working and researching across disciplines and borders in the international human health sector.

MISTI aims to bolster the mission of the Institutes' newly launched Life Sciences and Health Collaborative.

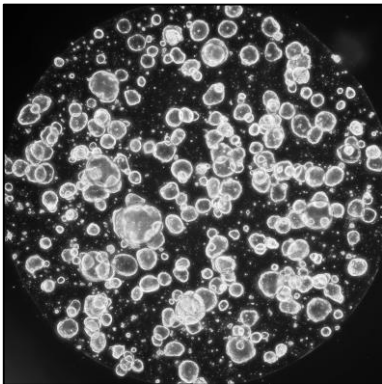
- Cancer, Alzheimer and other disease research
- Medical devices
- Drug discovery
- Research and clinical opportunities in hospitals And more...!



The background of the slide is a complex network of thin, light gray lines connecting small, semi-transparent gray dots. The dots are scattered across the entire page, and the lines form a web-like structure of irregular polygons. The overall effect is that of a digital or social network.

Student Spotlights and Country Opportunities

United Kingdom



Host: VenTo Lab, Wellcome Sanger Institute



“My research combines tissue engineering and single-cell multiomics to develop *in vitro* models of the human uterus (and soon, the placenta). This past summer, I had a great time travelling around the UK with friends from MISTI and beyond. I enjoyed Cambridge so much that I decided to stay: after my internship ends in December, I will continue my work at the VenTo Lab as a research assistant!”

Christina Kim, 5-7, 2024

UK

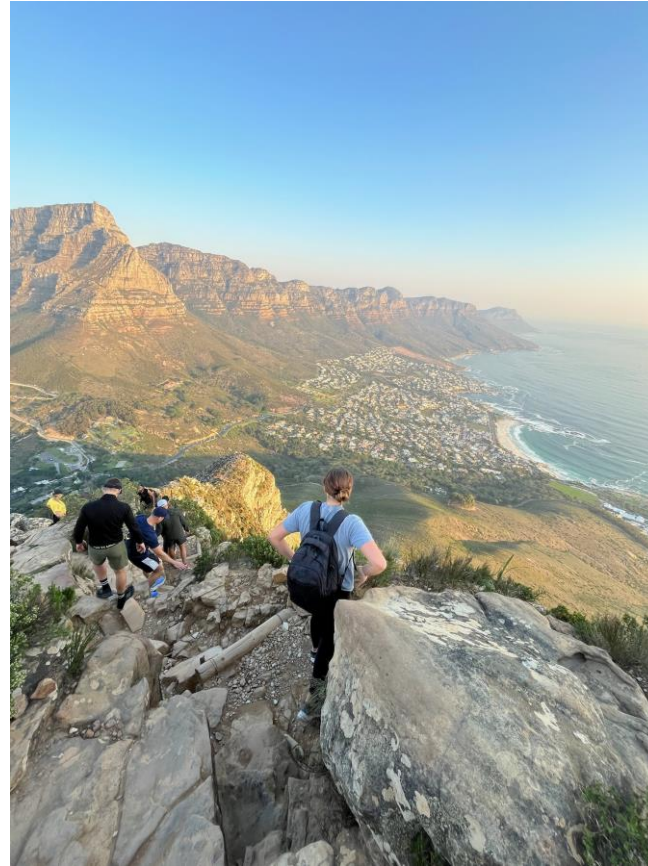
Host organizations:

- **Wellcome Sanger Institute**
 - Genomic research institute for students in courses 5, 6, 7, 20
- **Calla Lily Clinical Care**
 - Femtech scale-up working on vaginal drug delivery devices
 - Course(s): 2, 20, possibly 15/MBA
- **Center for Process Innovation (CPI)**
 - Biotech research, medical tech manufacturing; Course(s): 2, 3, 5, 7, 10, 20
 - Bridging academic research and commercially scalable products
 - Recent projects include drug delivery devices, working with lipid nanoparticles, and automating clinical processes in the lab
- **Infinitopes**
 - Cancer vaccine spinout from University of Oxford looking for students in course 6-4, 6-7, 6-9, 6-14 for work at intersection of machine learning, protein modeling, RNA sequencing
- **Proximie**
 - AI-powered medtech with a focus on computer vision to improve surgery outcomes

Managing Director: Stephen Barnes, barness@mit.edu

Program Coordinator: Abby MacKenzie, amacken@mit.edu

South Africa



UCT MedTech



"I had the privilege of working on the USplint project, a wrist/forearm immobilization device designed for rapid and accurate treatment of fractures by emergency medical technicians in South Africa"



Sophia Augier '27 - Course 2

Africa

Cape Verde (Portuguese)

Jean Piaget University Cabo Verde, Environmental Health Sciences: studying links between marine ecosystem degradation and brain health (Praia)

Ghana

Yemaachi Biotechnology: drug discovery using diverse genetic data (Accra)

Moving Health: sustainable transportation solutions for emergency medicine (Accra)

Wala Digital Health: digital solutions for processing, sharing, and delivery of blood for transfusions (Accra)

Zambia

Zambia Teaching Hospital: research collaboration with Boston Children's Hospital focused on malaria and pediatric neurology (Chipata)

South Africa

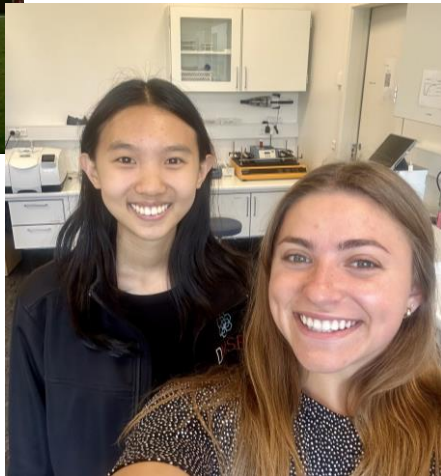
University of Cape Town – Medical School, Division of Global Surgery: study, research, practice, and advocacy that seeks to improve health outcomes and achieve health equity for all who require surgical, obstetric, and anesthesia care (Cape Town)

Council for Scientific and Industrial Research (CSIR): various research projects in synthetic biology, diagnostics, drug discovery, genetics and more (Pretoria)

SameSame Collective: digital counselling platform for LGBTQ+ youth in Africa

Impulse Biomedical: low cost medical devices for African continent (Cape Town)

Africa Health Research Institute (AHRI): various health related research projects across numerous disciplines (Durban)



Denmark

Ferrosan
Medical Devices

Ferrosan Medical Devices designs and produces hemostatic products and other medical devices. I was working in the product innovation department, which does early-stage research and development. I worked to develop in-house preliminary screening of new hemostatic matrices, specifically designing an in-vitro blood clotting assay and a bioadhesion testing method.

Rachel Ahlmark, Chemical Engineering, 2024

Denmark

Life science is a dominant industry in Denmark, and one of the cornerstones of the Danish economy. Denmark is home to major global leaders within health, biotech, medical devices, and pharmaceuticals, as well as a vibrant startup innovation ecosystem and strong research community. More than half of MISTI students that go to Denmark are pursuing health-related internships or research opportunities.



Research:

- University of Copenhagen Center for Basic Metabolic Research
- Technical University of Denmark Digital Health



Industry:

- A startup working on a novel localized non-hormonal contraceptive
- A medical device company developing automatically-flushing IV tubes
- An AI tool aiming to be “ChatGPT for life sciences research”



Long-term post-grad opportunities!

- Join world leaders like Novo Nordisk for 5-9 months



Application deadline for summer is **December 1**

- No language requirement
- Students must have relevant experience (UROP or internship)

Program Manager: Madeline Smith (msmith1@mit.edu)

India



- **Host:** Padmavathi Hospital (Hyderabad, Telangana, India)



- **Clinical research goal:** Evaluating state interventions to reduce nonmedical Cesarean sections in Telangana and developing global policy recs
 - Conducted interviews with healthcare providers, community health workers (CHWs), and government officials to understand barriers and policies to safe and effective maternal healthcare.
 - Shadowed gynecologists and CHWs; observed live births, patient consultations, and prenatal checkups.
 - Findings were synthesized into actionable policy recommendations to improve maternal outcomes in resource-limited settings worldwide.

India

Clinical/patient interaction opportunities at:

- Charitable eye hospital
- Large super specialty teaching hospital
- Rural primary healthcare clinics serving underserved communities

Location: Bangalore, India

Non-clinical opportunities:

- Public health research
- Medical device design for low resource settings
- Health screening of 1 million people & digital documentation
- AI/Data science projects within health- medical imaging datasets, disease and heatwave prediction models etc.

• **FULLY FUNDED**

• **NO LANGUAGE REQUIREMENT**

• **HOUSING & OTHER LOGISTICAL SUPPORT PROVIDED**



Program Manager: Megha Hegde (mhegde@mit.edu)

MIT-Eurasia: Armenia & Lithuania



[KILO.HEALTH](#)

Global digital health care and wellness company: digital health products of the future

[MINDLETIC](#)

Digital mental gym for workplaces

[OQNI](#)

An Armenian-based NGO that develops advanced mental health solutions and bionics to empower amputees

[ARMENIAN BIOINFORMATICS INSTITUTE](#)

Data-driven interdisciplinary research in life sciences

Program Manager: Katya Zabrovski, zabroves@mit.edu

Korea



KAIST

Internship fields: Neuroscience, bioengineering, biochemistry, bioimaging, advanced materials, nanotechnology, nanomedicine, medical devices, wearable tech . . . and more

Recent internship project: developing nanoparticle from chitosan-conjugated catechol to go through blood-brain barrier, potential to revolutionize treatment of brain diseases.



ORUM
THERAPEUTICS

Internship fields: Antibody engineering; drug analysis/optimization via computational & physical simulations; computational chemistry, protein modeling; structural biology & computational chemistry.

Recent internship project: Production of proteins—including transformation, cell culture, cell lysis, protein purification, SDS-PAGE electrophoresis—as part of development of targeted drug therapies.



KIST
Korea Institute of
Science and Technology
한국과학기술연구원

Internship fields: Neuroscience, neuro-medicine, bionics, biomaterials, molecular recognition, nano quantum information, sensor systems, human-centered interaction & robotics . . . and more.

Recent internship project: Analyzing RNA sequencing data collected from cerebrospinal fluid samples with goal of finding new biological insight regarding immune diseases in nervous system.

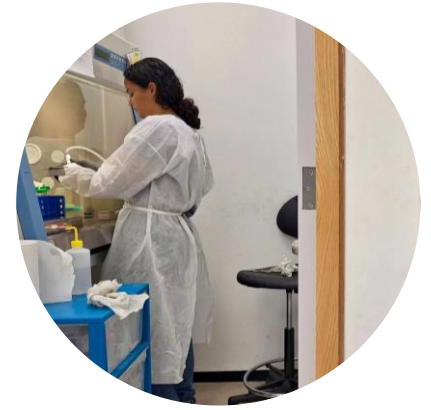
Search “MISTI Korea” on Handshake for more opportunities

Program Manager: Matt Burt

Mexico Summer 2024 Spotlight



Amy Wang, '26, Brain and Cognitive Sciences, Instituto de Neurobiología, Universidad Nacional Autónoma de México, Overexpression of Tau in transgenic mice



Facultad de
Ingeniería

Ernesto Gomez, Universidad Panamericana, Engineering Faculty, Computational Intelligence and Vision, Freezing of Gait (FOG) system in Parkinson's patients



Peyton Acoff, Universidad Nacional Autónoma de México, International Laboratory for Human Genome Research, Acral Melanoma Tumors

AVAILABLE PROJECT!

Program Manager: Griselda Gomez, gomezg@mit.edu

Program Assistant: Gabriela Díaz Quiñones, gdiazq@mit.edu



MISTI MIT Global Experiences

Australia & Hong Kong & Singapore



- **Study Abroad+ Internship!**
- A*STAR Bioinformatics Institute
- U of Hong Kong & Queen Mary Hospital
- Chinese U of Hong Kong, Faculty of Medicine
- U of Sydney, Infectious Disease Institute
- U of Hong Kong, Laboratory of Biomedical Imaging and Signal Processing

Program Manager: Sean Gilbert seang@mit.edu

France

Host: Louise Life, Bordeaux, France

Louise Life is a startup focused on using AI to aid in the fertility process.



Internship Activities: I worked on two projects during my internship. One was using an existing optical character recognition (OCR) tool to scan prescriptions that a patient uploads. My algorithm then extracted the relevant information, such as medication, dosage and date, and inserted into the company's backend database. The second project was leveraging Mistral, an open source LLM to generate expert systems regarding fertility treatment for a patient with a specific profile.

This was the experience of a lifetime, and one of my favorite things I've ever done at MIT. I would do this again in a heartbeat!

Trinity Gao, MEng, Computer Science and Engineering, 2024

Spain – Featured Projects

HM Hospitals, Madrid

Hyper Early Cancer Detection Rotation at a Comprehensive Cancer Center in Europe

Characterize different markers associated with normal aging and aging associated to neurodegenerative diseases such as Multiple Sclerosis, Lewy body dementia or Parkinson disease.



Institut Hospital del Mar d'Investigacions Mèdiques, Barcelona

Muscle Wasting and Cachexia in Chronic Respiratory Diseases and Lung Cancer



Center for Genomic Regulation (CRG), Systems Biology, Barcelona

Biological Mechanisms of Aging using engineering, physics, and life sciences approaches



Program Manager: Alicia Goldstein, aliciag@mit.edu

Program Assistant: Gabriela Díaz Quiñones, gdiazq@mit.edu



Portugal– Past Projects



INEB, Instituto de Engenharia Biomédica, Porto

Develop cellular therapy via IPS-Derived Neuro Stem Cells to help reverse induced Parkinson's



Instituto de Medicina Molecular, Lisbon

Characterize a human antibody directed against a cell



Program Manager: Alicia Goldstein, aliciag@mit.edu

Program Assistant: Gabriela Díaz Quiñones, gdiazq@mit.edu

Medical Interpreter Course



Interested in medical interpreting? Fluent in Spanish or Chinese? Apply by Dec. 4 for this 4-week intensive IAP medical interpreting virtual course that will train you to become a qualified medical interpreter and prepare you for national certification exams. Offered by CAPD Prehealth Advising.

<https://capd.mit.edu/iap-medical-interpreting-course/>

Link to this presentation – will be posted after today's session.



bit.ly/misti-health



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