CORPORATE GURUKUL #GoodToGreat

Internship For University Students

# Global Academic Internship Programme (GAIP) - Advanced

World's First Experiential On-Campus Academic Internship in 'Applied Machine Learning with Generative Al'



School of Computing



Beyond the Classroom. Prepare for the Future.



### From the Founder Mr Rajesh Panda

Dear Educators, Parents and Students,

In the realm of education, the journey from good to great is not just a destination; it's a relentless pursuit. At Corporate Gurukul, we believe that every student, guided by dedicated educators and supported by caring parents, has the potential to embark on this remarkable journey.

Our vision is one of transformation through applied learning experiences—a vision that extends beyond the conventional boundaries of education. We firmly believe that knowledge finds its true purpose when it is applied to solve real-world problems, when it ignites the flame of curiosity, and when it fuels the engine of innovation.

To the parents who entrust us with the dreams of their children, we understand the magnitude of your faith. We promise to provide a learning journey that transcends excellence—an experience that equips your children not only with knowledge, but also with the skills and values they need to become extraordinary individuals.

To our extraordinary students, you are the heart and soul of our institution. Your potential knows no bounds, and your journey from good to great begins here. Through immersions, you will broaden your horizon, discover yourself and your passion; through internships you will gain real-world insights and apply your knowledge on real-world problems; through research you will innovate better products to address challenges of people and planet.

Together, let us embark on this extraordinary journey—an expedition from good to great, where every student is empowered to make a lasting impact on the world. We are here to guide, support, and celebrate your achievements. Welcome to Corporate Gurukul, where education becomes the bridge to greatness, and together, we shape a future of boundless possibilities.

Empowering global leaders with 160,000 alumni across 36 countries

Exclusive programmes to **enhance your profiles** 

Study at **QS World Top 10 University** Campuses

Intern with
Fortune Top 10 Companies

### With Corporate Gurukul, engage in

## ACADEMIC INTERNSHIP LEARNING JOURNEY IN AI FOR ENGINEERING AND TECHNOLOGY STUDENTS

The GAIP Learning Journey is structured into a three-stage modular pathway, providing a comprehensive introduction to transformative fields such as AI, Machine Learning, Deep Learning, and Quantum Computing. It begins with GAIP Intermediate, which lays a strong foundation in Big Data Analytics using Deep Learning, progresses to GAIP Advanced, focusing on Applied Machine Learning with Generative AI, and culminates in GAIP Expert, specializing in Deep Learning with Quantum Computing.



Low

High



### Global Academic Internship Programme (GAIP) - Advanced

GAIP Advanced builds on GAIP Intermediate <which emphasizes developing real-world solutions in Computer Vision (CV) and Natural Language Processing (NLP) using Deep Learning and Big Data>. GAIP Advanced explores cuttingedge generative AI techniques, including GANs, transformers, multimodal generative models, and diffusion models, while addressing ethical implications like bias and misinformation. The curriculum includes practical hands-on sessions with tools like Hugging Face and DALL-E to implement and experiment with generative AI concepts. Participants will work on real-world applications such as image generation, style transfer, and AI-driven video creation. A final group project allows learners to integrate and apply their knowledge, showcasing creativity and technical expertise.



Duration

10 Days, On Campus at NUS, Singapore



**Pedagogy** Seminar and Project-Based Learning



Who should apply? Undergraduate University students Since its launch in 2016, the GAIP has empowered over 1500 students from 150+ universities across India, USA, Canada, UAE, UK, Singapore and Australia significantly enhancing their profiles for MS opportunities in QS Top 50 Universities worldwide and Careers in Data Science.





7.7/10 Average CGPA of Cohort



selection ratio ensuring highly ambitious student peer group





**EXPERIENCE SINGAPORE** Ranked World #1 in Education Gateway to Asia



**EXPERIENCE NATIONAL UNIVERSITY OF SINGAPORE (NUS)** QS World Ranked #8 University



**PRACTICAL AND ADVANCED LEARNING** Explore and learn with faculty and industry practitioners on advanced GenAl, ML, IoT and Deep Learning concepts and apply them in projects addressing real-world challenges









ACCESS EXPERT MENTORING



#### ENHANCE YOUR PROFILE FOR MS ABROAD IN TOP UNIVERSITIES

On completion, receive a Letter of Evaluation from NUS, Certificate of Completion from NUS and Corporate Gurukul

#### **BUILD A GLOBAL NETWORK**



Interact, innovate and collaborate with young and ambitious like-minded peers from across the globe



# Level Up with the Future-Ready Curriculum **EXPLORE. EXPERIENCE. ACHIEVE.**

With an unparalleled focus on emerging technologies, the programme offers a rigorous, hands-on learning experience focused on emerging technologies. This programme is designed to catapult them into advanced studies and high-impact careers in the tech industry, making them the innovators of tomorrow.

#### **Foundations of Generative AI Models**

This session provides an introduction to generative AI, focusing on model types like Variational Autoencoders (VAEs) and Autoregressive Models. It includes hands-on exercises for setting up Python environments and implementing basic VAEs to understand encoding-decoding processes.

# ormers and Large Language

#### Transformers and Large Language Models (LLMs)

The session delves into transformer architectures and their applications in NLP and generative AI, focusing on models like GPT and BERT. Activities include fine-tuning models using Hugging Face and a workshop on prompt engineering to optimize model outputs.

# Generative Adversarial Networks (GANs)

Participants explore GAN architectures, training challenges, and applications such as image synthesis and style transfer. Practical exercises include building a basic GAN and experimenting with pre-trained models like CycleGAN for image transformation tasks.

#### Multimodal Generative Models Image and Video Generation

This session examines generative models for image and video domains, discussing tools like DALL-E and Synthesia, along with ethical considerations. Practical tasks include experimenting with prompt-based image generation and creating Al-driven videos.

#### **Final Project Presentation**

Participants present their generative model project ideas, addressing both ethical and technical challenges. This culmination reinforces learning by applying theoretical knowledge to real-world scenarios.



# Inspiring curiosity and encouraging innovation COMPREHENSIVE, PRACTICAL AND FORWARD-THINKING EXPERIENCE

#### #WhyPursueGAIP

10 days to change your life, transform your knowledge, and prepare you for the future. From deep learning to Gen AI to NLP, you will design, build and create to solve real-time problems.

Through this internship you will be able to:

- Strengthen your foundation in Neural Networks with hands-on exercises using TensorFlow and Python to build practical skills
- Understand and apply concepts of Convolutional and Recurrent Neural Networks to solve diverse real-world problems.
- Explore text mining concepts such as classification, clustering, and association to extract actionable insights.



- Learn generative AI models like GANs, VAEs, and transformers while addressing ethical considerations in applications.
- Build and train models effectively using advanced techniques like Gradient Descent, Back-Propagation, and Reinforcement Learning

#### #HowDoYouLearn



Immersive learning deeply engages students through real-world scenarios and hands-on experiences, enhancing comprehension, retention and critical thinking

Lectures: understanding core concepts Assignments: apply core concepts to projects Quiz: continuous individual assessment Projects: collaborative group project Presentations: group project assessment

# Experience Global Learning at **ASIA'S BEST UNIVERSITY**







QS WORLD UNIVERSITY RANKING #6 BY SUBJECT Computer Science & Information Systems 2024

Established in 1905, the National University of Singapore (NUS) is a global leader in higher education. NUS offers an exhilarating environment for learning and innovation. The NUS School of Computing, ranked #6 globally in the QS World University Rankings by Subject 2024., excels in areas like AI and fintech, attracting top talent and fostering groundbreaking research. Its vibrant entrepreneurial ecosystem, including The Furnace startup incubator, fuels creativity and leadership, making it an inspiring place to study and thrive in a connected world.

#### LEARNING OUTCOMES ALIGNED to MASTERING GEN AI

- **Foundations of Generative Al** Covers introductory concepts, variational autoencoders, and practical PyTorch setups.
- Generative Adversarial Networks (GANs) Explores GAN architectures, training challenges, and advanced variants like StyleGAN and CycleGAN.
- **Transformers and Large Language Models (LLMs) -** Examines transformer architectures, popular models like GPT-3, and prompt engineering techniques using Hugging Face.
- Multimodal Generative Models Focuses on image/video generation with diffusion models and ethical considerations.

# Access and learn from **DISTINGUISHED FACULTY**



Associate Professor School of Computing (SoC)

#### **DR. TAN WEE KEK**

#### **Subject Expert:**

Specializes in teaching senior undergraduates to develop enterprise information systems, focusing on information security management and concepts of mobile and ubiquitous commerce

#### **Professional Career:**

Extensive experience in consumer-based information technology, including online decision aids, social computing, virtual worlds, and consumer cloud services. Research is grounded in design science, a widely adopted problem-solving paradigm in information systems

#### **Educational Career:**

Holds a PhD in Information Systems (July 2013) and a Bachelor of Computing in Information Systems from the National University of Singapore



Senior Lecturer School of Computing (SoC)

#### DR. AMIRHASSAN MONAJEMI

#### Subject Expert:

Al and Data Science to adult learners, Al Machine Learning, and Data Science

#### **Professional Career:**

Lifelong Education (SCALE) teaching AI and Data Science to adult learners. Before joining NUS, he was with the Faculty of Computer Engineering, University of Isfahan, Iran, where he was serving as a professor of AI, Machine Learning, and Data Science

#### **Educational Career:**

BSc and MSc in Computer Engineering at Isfahan University of Technology (IUT), and Shiraz University. PhD in computer engineering, pattern recognition and image processing, from the University of Bristol, Bristol, England



Lecturer School of Computing (SoC)

#### **DR. SANKA RASNAYAKA**

#### **Subject Expert:**

Discrete Structures, Biometric Authentication, Design and Analysis of Algorithms, Programming Methodology

#### **Professional Career:**

Joined the National University of Singapore's School of Computing as a Lecturer in January 2022. He is driven by a passion for applying his expertise to solve real-world problems and excels in both leadership and collaborative roles

#### **Educational Career:**

PhD in Computer Science, School of Computing, National University of Singapore and a BSc (Hons) in Computer Science and Engineering, University of Moratuwa, Sri Lanka

# Student Case Studies EMPOWERING INNOVATORS OF TOMORROW

#### Case Study 1

## Pancreatic Cancer Detection and Stage Classification



Addressing real-world challenges with professional researchers at the best universities

#### **Problem Statement**

Pancreatic cancer is one of the most lethal cancers, with a high mortality rate due to late diagnosis. It ranks as a leading cause of cancer-related deaths, yet affordable and accessible diagnostic solutions remain limited. Group 9 aimed to bridge this gap by developing an AI-powered system for early detection and staging of pancreatic cancer, targeting small clinics and labs. The goal was to use urinary biomarkers and CT scans for accurate and scalable diagnostics

#### Methodology

The project utilized a two-level approach. Level 1 analyzed urinary biomarkers (LYVE1, REG1B, TFF1, and Creatinine) with XGBoost to predict cancer likelihood, while Level 2 determined cancer stages using CatBoost. For imaging, preprocessing techniques like median filtering and Otsu thresholding prepared CT scans. GANs were employed for tumor localization and segmentation, creating detailed segmentation masks and heatmaps to highlight tumor regions. The system integrated biomarker and imaging analysis into an interactive app with real-time feedback.

#### **Algorithms Used**

XGBoost: Predicted cancer presence using biomarker data.
 CatBoost: Handled stage detection with ensemble learning.
 GANs: Generated segmentation masks for tumor localization, using U-Net for detailed outputs.
 CNNs: Classified images and extracted spatial features

#### Solutions

The AI-powered system enabled early detection and staging of pancreatic cancer. GANs improved accuracy in tumor segmentation, while XGBoost and CatBoost provided reliable predictions. Integrated into a user-friendly app, the solution democratized cancer diagnostics, offering accessible, accurate, and affordable tools for small clinics, improving survival rates and healthcare outcomes.

# Life after the programme STUDENT OR ALUMNI, YOU ARE ALWAYS A BIG PART OF OUR FAMILY!

- Join the league of alumni from World top 50 universities
- Get an edge in employment, higher studies or research
- Opportunity to get your paper published in top journals and even get a patent!
- Collaborate with talented peers from esteemed universities across the globe

#### **Top Participating Universities**





Murari Bommireddi 4th Year Integrated M.Tech Student, VIT (Specialization in EDA & ML)

"My experience with the GAIP Winter 2024 programme by Corporate Gurukul at NUS Singapore has been truly rewarding. Studying at a top university with exceptional faculty and bright peers has been inspiring.

A highlight was collaborating on a project to detect pancreatic cancer using urinary biomarkers. Aligning diverse team ideas was challenging but enriching, enhancing my teamwork and problem-solving skills.

The programme deepened my understanding of machine learning and deep learning through hands-on learning and expert guidance, preparing me for a career in the field. Exploring the vibrant NUS campus and Singapore's culture has made this journey unforgettable. I'm grateful for this opportunity, which has broadened my horizons both personally and professionally."



Sayeda Fatin Alvi 4th Year Student, VIT Chennai B.Tech Computer Science Engineering (Specialization in Al and ML)

"Participating in the GAIP programme by Corporate Gurukul at NUS Singapore has been a transformative experience. It seamlessly blended theoretical learning with hands-on application.

A key highlight was developing a pancreatic tumor detection system using AI to analyze lab reports and CT scans, overcoming the challenge of aligning diverse team ideas. Guidance from NUS professors and a focus on practical learning have deepened my understanding of AI and ML, preparing me for a master's in the field.

Beyond academics, exploring the vibrant NUS campus and Singapore's rich culture has made this journey truly rewarding. I'm incredibly grateful for this opportunity, which has sharpened my skills and broadened my perspective."

## Experience EMPOWERING TOMORROW'S YOUTH THROUGH TRANSFORMATIVE EXPERIENCES



**Define and Solve Problems** 



**Focused Learning on Future Skills** 



**Teamwork and Collaboration** 



**Building Confidence for MS Abroad** 





Exposure to Adapt to Global cities, cultures, cuisines and people

#### #HowToApply?













PROGRAMME FEE



# With Corporate Gurukul, engage in APPLIED EXPERIENTIAL LEARNING, WHERE ACADEMIC BRILLIANCE MEETS REAL-WORLD CHALLENGES

#### #WhyWeExist

We create empathetic leaders of tomorrow who understand themselves and the world around them. We want to inspire and equip them with knowledge and skills to identify and solve real-world problems.

## Driving excellence since 2007, with 95% alumni admitted to QS Top 50 Universities

#### #WhatWeDo

**Immersion** is your journey to self-discovery - where you broaden your horizons, delve deep into understanding your true self, and uncover your passions. This transformative experience is essential for personal growth and clarity about your future path.

**Internships** are the bridge between your passion, theoretical knowledge and real-world application, providing a platform to test your skills in practical scenarios, develop prototypes, and create tangible products. This hands-on experience is invaluable, equipping you with insights and expertise that can only be gained outside the classroom. **Research** is the cornerstone of innovation. It's about diving into first principles and rigorously evaluating how existing products can be significantly improved. This process is not just about incremental changes but about envisioning and creating impactful solutions that address the pressing challenges faced by both people and the planet.

Together, these three experiences form a comprehensive journey, preparing you to not only understand and navigate the world but also to meaningfully contribute to it, creating a lasting impact on society and environment. This holistic approach ensures that you are equipped to innovate and lead with purpose.

#### **Making the BEST get BETTER!**

#### #HowDoWeDoIt? | #OurPedagogy

Dive into a transformative learning journey inspired by the 'Gurukul' philosophy, where lifelong learning meets real-world challenges. Our programmes are crafted to nurture you into critical thinkers, problem solvers, and independent decision-makers, equipped to thrive in a global environment. You immerse in global environment, learning and cultures through our immersions. You solve real-world problems through internships. You deep dive into global challenges through intense research.

# No matter your path - corporate career, top universities, or academic exploration - we are here to help you take your Purpose and Passion to People and Planet!



# Power Up Your Dreams! LEARN BY DOING

Ignite your passion and leave a mark on the planet for the better!

With our **selection ratio** as high as **1:35**, learn with the brightest minds from around the world

#### #HowDoWeDolt?

Our approach integrates the 4-stage pedagogy with our 6P philosophy, ensuring participants achieve goals while making a meaningful impact on society and the environment. This comprehensive approach equips learners with the knowledge, skills, and mindset needed for lifelong success and positive impact.



Conceptual training with our top Global Partner(s)



1:1 Mentoring with Certified Experts



Individual/Team Assessment (assignments and quiz)



Real world Internship/Research Project (team projects and presentation)

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Certificate, Transcript and LoR from our Global Partner(s)

#### #WhyShouldYouJoinOurGlobalCareerProgrammes?

Innovative	Selective and	Global Alumni	Scholarship
Curriculum	Elite	Network	Success
90% alumni voted	Impressive	95% alumni	Over <b>90% alumni</b>
that 80% of the	selection ratio of	admitted to QS Top	secured a
curriculum offered	1:35, maintaining	50 Universities.	minimum of <b>50%</b>
was new and	top caliber cohort	Global network of	<b>scholarship</b> in top
relevant, aligning	of the best	1,60,000 alumni	Universities across
to MS abroad	participants	across 36 countries	the globe

# Learn with Top-Tier GLOBAL PARTNERS





QS WORLD UNIVERSITY RANKING #8





QS WORLD UNIVERSITY RANKING #5



INDUSTRY LEADER IN AI





LEADING STUDENT AGENCY WORLDWIDE



Hewlett Packard Enterprise

INDUSTRY LEADER IN TECHNOLOGY



Immerse yourself in experiential learning, vibrant cultures, and dynamic business landscapes across 3 top global cities and 3 top universities. Receive world-class training, mentorship, assessments, and certifications from our world-class partners.



APPLY to the Programme today

# CORPORATE GURUKUL

17 years 27 countries 15 nationalities 40 cities 100+ research scholars 200+ schools 100+ universities 50+ faculty experts 1,60,000 alumni www.corporategurukul.com For more Information: contact@corporategurukul.com

# Move from #GoodToGreat

Rooted in a unique blend of tradition and innovation, our programmes draw inspiration from ancient wisdom while integrating modern methodologies tailored to the demands of contemporary work life.

As your inspiring coach, enabler, and companion, we serve as your impact window, illuminating the path to realizing your full potential. With a focus on nurturing empathetic leadership qualities and fostering a global perspective, Corporate Gurukul equips students with the skills, mindset, and support needed to excel in their academic pursuits and beyond.

Join us on this transformative journey and walk the path of #GoodToGreat