Address: Giza, Egypt
Phone: (+20)1018043608
bahaa_helmy@fcis.bsu.edu.eg

Bahaa Eldin

Helmy Shaban

Military Status:
Exempted Birthdate:
26/12/1GG5
Nationality: Egyptian

Objective

To leverage my expertise in machine learning, image processing, and optimization algorithms to contribute to pioneering research in computer science.

Education

Faculty of Computers and Artificial Intelligence, **Minya University**, Egypt.

MSc, Image Processing, Feb 2019

- **Thesis Topic:** A Multi-level thresholding image segmentation using nature-inspired optimization algorithms

Faculty of Computers and Artificial Intelligence, **Beni-Suef University**, Egypt.

BSc, Computer Science, July 2018

- **Overall grade:** Very Good - Total GPA is 3.67/4
- **Graduation project grade:** Excellent

Technical Skills

Languages	Python, MATLAB, Java, C++, SQL, PHP, MySQL, HTML, CSS, Java-Script, Bootstrap, and Latex
Tools/IDEs	Eclipse, PyCharm, MATLAB, Visual Studio Code, Jupyter Notebook, Git, TensorFlow/Keras, Docker, Apache Spark, Tableau, Power BI
Research interests	Meta-heuristic optimization algorithms, Image processing, Image Segmentation, Deep Convolutional Neural Networks, Natural Language Processing, Transformers

Work Experience

- **Assistant Lecturer – Computer Science, Beni-Suef University (2019 – Present)**

  As an Assistant Lecturer, I have been integral to both the teaching and research activities within the Computer Science department. My responsibilities include lecturing on advanced topics such as Artificial Intelligence, Deep Learning, and Image Processing. I have supervised undergraduate and postgraduate research projects, guiding students through complex algorithms and their practical applications. Additionally, I co-authored several research papers in reputable journals, contributing to advancements in multi-thresholding image segmentation and optimization algorithms. I also led a university-wide initiative to integrate machine learning into the curriculum, significantly enhancing the department's academic offerings.

- **Technical Writer – Baeldung (2021 – Present)**

  As a Technical Writer at Baeldung, I have been responsible for creating and maintaining high-quality technical content related to Python and software development. My role involves researching, drafting, and editing articles and tutorials to ensure clarity, accuracy, and relevance for our audience of developers. I work closely with subject matter experts to produce comprehensive guides, code examples, and best practices that address common challenges and emerging trends in the industry. This position has honed my skills in technical communication and deepened my expertise in software development topics.

- **Mentor @ Udacity (2022 – 2023)**

  In my role as a Mentor at Udacity, I supported students in their journey through various Nanodegree programs, including Android Development and AI. I provided personalized guidance, feedback, and support on assignments and projects, helping students overcome technical challenges and improve their skills. My responsibilities included facilitating discussions, conducting code reviews, and offering career advice. This experience enhanced my mentoring abilities and deepened my understanding of industry- relevant technologies and practices.

- **Consultant – AI and Machine Learning for Industry (2020 – 2022)**

  As a consultant, I provided expertise to various industries, helping them leverage AI and machine learning to solve complex problems. My projects ranged from developing predictive maintenance models for manufacturing to creating personalized recommendation systems for e-commerce platforms. I worked closely with stakeholders to understand their challenges, design AI-driven solutions, and oversee the implementation of these technologies. My consultancy work has led to measurable improvements in efficiency and customer satisfaction for my clients.

- **Move Up – Artificial Intelligence Instructor (2017 – 2019)**

  At Move Up, I designed and delivered comprehensive courses on Artificial Intelligence (AI), covering essential topics such as machine learning, neural networks, and data analysis. My role involved creating curriculum content, leading interactive workshops, and mentoring students through AI-based projects. I emphasized practical applications of AI in various industries, helping students bridge the gap between theoretical concepts and real-world implementation. This position allowed me to refine my teaching methodologies and fostered a deep understanding of AI technologies among the learners.

- **BBI Software Company (2015 – 2016)**

At BBI Software Company, I gained practical experience in software development, working on real-world projects alongside experienced developers. My responsibilities included coding, debugging, and testing software applications, with a focus on improving code quality and software performance. This early experience in the industry provided me with valuable insights into professional software development practices and teamwork.

Research publication experience

Publication Title	Journal	Ref.
A novel Black Widow Optimization algorithm for multilevel thresholding image segmentation	**Expert Systems with Applications**	[1]
An improved tunicate swarm algorithm for global optimization and image segmentation	**IEEE Access**	[2]
An enhanced Archimedes optimization algorithm based on Local escaping operator and Orthogonal learning for PEM fuel cell parameter identification	**Engineering Applications of Artificial Intelligence**	[3]
Multi-level Thresholding Image Segmentation Based on Nature-Inspired Optimization Algorithms: A Comprehensive Review	**Metaheuristics in Machine Learning: Theory and Applications**	[4]
An efficient multi-thresholding based COVID-19 CT images segmentation approach using an improved equilibrium optimizer	**Biomedical Signal Processing and Control**	[5]
An efficient orthogonal opposition-based learning slime mold algorithm for maximum power point tracking	**Neural Computing and Applications**	[6]
Modified honey badger algorithm based global MPPT for triple-junction solar photovoltaic system under partial shading condition and global optimization	**Energy**	[7]
Optimal reconfiguration strategy based on modified Runge Kutta optimizer to mitigate partial shading condition in photovoltaic systems	**Energy Reports**	[8]

✔ Projects

Project Description	GitHub Link
Complete classification and optimization of a deep CNN model with Genetic Algorithm to classify COVID-19 cases	HyperParameter Tuning
Complete an exploration data analysis (EDA) for Startups-Expansions dataset using Python	Startups-Expansion Case Study
Complete a CNN prediction model for Brain tumor classification problem using Python	Brain Tumor CNN Classification

Complete a project to predict COVID-19 infected cases from X-ray images	COVID-19 Prediction Demo
Complete a CNN prediction model for heart disease classification problem using Python	ResNet101 Heart Beats

Complete a classification model of Arabic sign language recognition using deep CNN	Arabic Sign Recognition
Complete the implementation of the most pre-processing operations for image processing from scratch using OpenCV	Image Processing
Complete a project to predict load electricity	Load Electricity Prediction Model
Complete a simple Python script for scraping data from WUZZUF website	WUZZUF Web Scrapping Demo
Complete dashboards using Power BI	Dashboards using Power BI

Profiles

- **Research Gate profile:** Bahaa El-Din Helmy
- **Google Scholar profile:** Bahaa El-din Helmy - Google الباحث العلمي من
- **LinkedIn profile:** Bahaa El-Din Helmy (Ph.D) | LinkedIn

Upon request, I am happy to provide additional information, references, or samples of my work