Youssef Hosni

Email: Youssef.rafaat95@gmail.com
Mobile: +358449271970
Address: Oulu, Finland, 90570

EDUCATION

- **University of Oulu** — Oulu, Finland
  Master's in computer science (Biomedical signal and imaging processing); GPA: 4/5 — *Sep. 2018 – July. 2020*
- **Alexandria University** — Alexandria, Egypt
  Bachelor of Engineering in communications and Electronics; GPA: 3.4/4 — *Sep. 2013 – Jul. 2018*

EXPERIENCE

University of Oulu — Oulu, Finland

Data Science Researcher — *Oct. 2019 – Dec. 2021*

- Utilized statistical methods to find the significant differences in the modulation of brain cardiovascular pulse with respiration between controls and Alzheimer's cases to help the neurological researchers to have a better understanding of Alzheimer's diseases. The differences found were strongly significant ($P<0.01$) and novel.
- Preprocessed and extracted features using a 3D multiresolution optical flow of 0.25 TB complex brain imaging data using python.
- Publication: **Youssef Hosni**, Ahmed Elabasy et.al., Respiration modulates cardiovascular brain impulse pathology in Alzheimer's disease. Submitted to Journal of Cerebral Blood Flow and Metabolism.
- Publication: Ahmed Elabasy, **Youssef Hosni** et.al., Optical Flow Analysis of Propagating Respiratory Brain Pulsations. Submitted to IEEE Transactions on Medical Imaging.

Teaching Assistant — *Oct. 2019 – Dec. 2019*

- Effectively communicating and answering 60+ international students' questions and involved in creating assignments, exams for the Bio-signal Processing course.

Machine Learning Researcher — *Jun. 2019 – Aug. 2019*

- Utilized Python to develop supervised machine learning techniques to classify imbalanced Alzheimer's CV_{BOLD} data, which enhanced the classification performance by 10%.
- Presented the results to a team of researchers and reported the results to my supervisor. **[Blog]**

Selected PROJECTS [PORTFOLIO]

- **Find the best neighborhood to open a new Gym:** Utilized python to implement unsupervised techniques to helping the business owner to increase his revenue by finding the best neighborhood to open a new gym. **[GitHub page] [Blog]**
- **Customer identification for mail order products**: Utilized python to implement unsupervised learning techniques to find the core customers for a mail-order sales company and analyze them for better-directed marketing. This project was in partnership with Bertelsmann Arvato Analytics. **[GitHub page]**
- **Identification of the camera manipulation images**: Developed a generic end-to-end CNN-based model to detect the camera image manipulations for a better camera model identification. This work resulted in a **research paper.**
- **Power consumption forecasting:** Increasing the efficiency of power delivery by predicting the power consumption using python and deployed on AWS SageMaker. **[GitHub page]**

SKILLS

- **Coding**: Python, R, Git, SQL, Linux, Shell, MATLAB, C.
- **Data Science**: Data Science pipeline (cleansing, wrangling, modeling, visualization, interpretation, deployment), Statistics, Time series, A/B testing, Experimental design, Hypothesis testing, ETL.
- **Machine Learning & Big data**: Python (Scikit-learn, NumPy, SciPy, matplotlib, seaborn, Pandas, TensorFlow, Keras, Pytorch), Hadoop, Spark, MongoDB, AWS.

SELECTED COURSEWORK

Machine Learning, Machine learning engineering, Machine vision, Data Mining, Probability and statistics, Deep Learning, AWS Fundamentals, Introduction to Data Science, Big data Fundamentals.