Ziyuan Ye

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Education

Southern University of Science and Technology Shenzhen, China
Master of Engineering in Biomedical Engineering, Supervisor: Prof.Quanying Liu *Sep. 2020 – Present*

Southern University of Science and Technology Shenzhen, China
Bachelor of Engineering in Computer Science and Engineering, Supervisor: Prof.Xin Yao *Sep. 2016 – Jul. 2020*

Experience

Visiting Scholar Shenzhen, China
Southern University of Science and Technology *Jun. 2020 – Sep. 2020*

- Proposed a multi-depot multi-trip multi-disposal-facility capacitated vehicle routing problem (M3CVRP) model for real world waste collection problem;
- Two patents were invented (Application number: 202011553162.X, 202110012924.3);
- One paper was published.

Algorithm Engineer Shenzhen, China
Peng Cheng Laboratory *Jun. 2019 – Sep. 2019*

- Implementation of GRAPE Algorithm with given number of quantum bit;
- Improved the efficiency of the GRAPE Algorithm.

Publications

Ye Z. Air Pollutants Prediction in Shenzhen Based on ARIMA and Prophet Method[C]//E3S Web of Conferences. EDP Sciences, 2019, 136: 05001.

Projects

Waste Collection Vehicle Routing Problem | *Python, Cplex, C++, Git* Sep. 2019 – Present

- Proposed and solved a multi-depot multi-trip multi-disposal-facility capacitated vehicle routing problem (M3CVRP) model for real world waste collection problem;
- Proposed three novel search operators for evolutionary algorithm;
- Proposed a Heuristic-assisted Solution Initialisation and an Extended Local Search Algorithm for solving M3CVRP;
- Under the guidance of Southern University of Science and Technology professor Jialin Liu and professor Xin Yao.

Court Assisted Corruption Judgement System | *Python, Git* Sep. 2018 – May. 2019

- Established a judgement text similarity search model and enabled users to find top ten similar verdict texts in the database based on the input verdict texts;
- Used TF-IDF to represent the Judgement text, build up keyword metric and applied Word2Vec and Bidirectional Encoder Representations from Transformers (Bert) model to achieve the word encoding;
- High similarity in money, means and features of crimes with the given verdict texts among top ten verdict texts;
- Under the guidance of Southern University of Science and Technology professor Bo Yuan and professor Xin Yao.

Air Pollutant Prediction | *Python, fbprophet, Git* May. 2018 – Jan. 2019

- Analyzed the influence of spatial factors and sequential factors on air quality prediction;
- Utilized fbprophet and ARIMA time series models together with self-constructed space model;
- Achieved accuracy of 3-days air quality prediction equaling to 77.8%;
- Under the guidance of Carnegie Mellon University professor Gerald J. Wang.

Technical Skills

Languages: Proficient in Java and Python, Familiar with C/C++, matlab and sql.
Frameworks: Maven, Git, Flask, MySQL and SQLAIchemy.
Software: JetBrain(pycharm, Datagrip, IntelliJ), Eclipse, VScode, Atom, Sublime, Android Studio, TeXstudio.
Libraries: Proficient in most of the mainstream python data analysis packages, includes Pandas, NumPy, Matplotlib, scikit-learn.