# Ziyuan Ye

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## Education

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

**Southern University of Science and Technology** Shenzhen, China
*B.E. in Computer Science and Engineering, Supervisor: Dr. Jialin Liu and Prof. Xin Yao* *Sep. 2016 – Jun. 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.