S-Data Science Lab

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09/08/2022

Overview

- **Our Mission**
  - **New AI Paradigms, e.g. Optimization Methods, Model Architectures, etc.**
  - AI-Empowered Scientific Discovery, Especially for Healthcare
  - AI + Biology/Bioinformatics/Chemistry/Medication/....
- **Tech Questions**
  - Graph Inference, Modeling, Analysis, Generation, and Control
- **Applications**
  - Molecule Retrosynthesis, Generation, Virtual Screening, Toxicology
  - Patient Modeling, Analysis, and Treatment Intervention
  - **Single Cell Analysis, Protein Analysis**
- **Current Tech Routes**
  - Optimal Transport + Point Process
  - Open-minded to Other Theoretical and Methodological Tools

Your Missions (Our Goals)

- **Strong Mathematical Modeling Skill**
  - Abstract Ability: Describe Real-World Problems in Math
  - Association Ability: Connect Knowledge/Tech in Different Fields
  - Problem Solver: Learn Optimization Methods and Theory
- **Outstanding Communication Skill**
  - Listening, Writing, Presentation, English Skill
- **Terrific Coding Skill**
  - Fluent on Python, Build and Maintain Toolboxes and Libs (Your Research Fruits)
  - If you would like, teach me other things (e.g., CUDA)
- **A Honest Person THE MOST IMPORTANT!**
  - Fight to Academic Misconduct
- **If our goals are inconsistent, we need to talk in person...**

Target Publications

- **Conferences**
  - **CCF-A:** ICML, NeurIPS, ICLR, COLT, KDD, WWW, AAAI, IJCAI, CVPR, ICCV, SIGIR, ACMMM
  - **CCF-B:** ECCV, WSDM, CIKM, UAI, AISTATS, ICASSP, SDM, ICDM, ...
  - **Others:** MLHC, CICAI, ...
- **Journals**
  - JMLR, TPAMI, TIT, SIAM Optimization, Nature Machine Intelligence, ...
  - TSP, TNNLS, TKDE, TSIPN, ...
- **1. Let me know when you have other targets.**
- **2. Show me your COMPLETE draft two weeks before ddl.**
- **3. Don't abuse coauthorship.**
- **4. Be careful, make your work systematic.**

Workload and Payment

- **Payment Strategy**
  - Time: <10 months
  - Amount: Depend on funding status
- **Internship and visiting scholarship**
  - For summer internships, no restrictions.
    - Be responsible for yourselves.
  - For the internships in other time periods
    - Let me know in advance. Correlated with your research.
  - Open to international exchange and visiting projects.
    - Let me know in advance. Correlated with your research.
- **Flexibility of Workload**
  - Do not absent group/project meetings without notices
  - No more rules

Project Management

- **https://github.com/SDS-Lab**
  - Release our code through this organization and fork to yourself.
  - Maintain your works on your own.
- Generally, each work is associated with **papers, codes, and patents.**

What We Did Last Year (Rookie Year)?

- **Accepted Works (Let us cheer up:))**
  - My work: TPAMI+2, ICASSP 2022, ACMMM 2022, NeurIPS 2021
  - Team work: CIKM 2022, CICAI 2021+2022
  - Patents: + 3
  - Every PhD has at least one submission.

- **Submissions (Let us cross fingers:))**
  - AAAI 2023 + 2, NeurIPS 2022 + 1, ICLR 2023 (maybe +1)

- **Projects:**
  - Tencent AI Lab, China Union, RUC Startup Funding, others....
  - NSFC Young Scholar

What Will We Do This Year?

- **Projects:**
  - Huawei Mindspore, 302 Hospital
  - NSFC Young Scholar
  - MOOC Funding (Qingmei, Fengjiao, Minjie)
  - Prepare for writing and applying other proposals

- **Research work:**
  - 1st-year PhD: at least submit one paper.
  - 2nd-year PhD: one accepted work + at least submit one more paper.
  - Sharpen your talking and writing skills.

What Will We Do This Year?

- **Research**
  - **More reading workloads.** Improve your reading and investigation efficiency.
    - Try to compress your preparation time for reading groups
    - Push me with papers, rather than let me push you
  - **More informative group meeting report.** (Jiajia and Yajie are good examples.)
    - It is a good chance to share your research and interact with others.
  - After reading sufficiently, more brain storms
    - Try to propose research ideas by yourselves
  - **Coding and math**
    - **Be familiar with basic concepts, knowledge and tools in your field**

What Will We Do This Year?

- Presentation Skill
  - Level 1: Brave
    - Minjie, Qingmei, Fengjiao, Fanmeng, Yuzhou
  - Level 2: Fluent
    - Shen, Yue
  - Level 3: Professional
    - Hongteng
  - Level 4: Shining
- Writing Skill
  - Level 0:
    - Fanmeng
  - Level 1: Brave
    - Fengjiao, Minjie, Shen, Qingmei, Yuzhou
  - Level 2: Fluent
    - Yue
  - Level 3: Professional
    - Hongteng
  - Level 4: Shining

Thanks & QA!