Gan Xu

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Education

- **Washington University in St. Louis** — Saint Louis, MO
  M.Sc. Computer Science — *Dec 2020(Expected)*
- **University of North Carolina at Chapel Hill** — Chapel Hill, NC
  B.Sc. Computer Science, Mathematics — *Dec 2017*

Professional Experience

- **Assistant Bioinformatician, Carolina Genomic Center** *Feb 2018 - Aug 2018*
  Collected and prepared research data for the computational experiment. Designed and set workflow pipeline for data analysis. Set up work environment with Slurm and LSF work scheduler on cluster. Solved and reported technical problem to research lab members.

Projects

- **Anytime Reasoning and Analysis for Kill-Web Negotiation and Instantiation** *May 2019 - Now*
  Collaborated project with Raytheon BBN Technologies. Analyze and design algorithm for different mission types. Used distributed constraint optimization for automatically scheduling assets for various missions. Set up test environment and test case generators. Written API of DCOP module for other part of project.
- **Smart Pet Feeder** *Sep 2019 - Dec 2019*
  Designed and prototyped an automated pet food dispenser that can use low power wireless devices combined with AWS IoT to allow easy scheduling and dispensing of pet food. Used facial recognition algorithms for animals identification. Designed simple learning algorithms combined with IoT devices can monitor pet feeding habits and detect abnormal situation

Research Experience

- **Department of Computer Science and Engineering** — Saint Louis, MO
  Graduate Research Assistant, Advisor: William Yeoh
  - **Communication-Aware DPOP** *Feb 2019 - Now*
    Optimizing the communication between agents and speeding up resolution for Distributed Pseudo-tree Optimization Procedure. We propose methods to optimally split and reconstruct messages for DPOP, a popular complete DCOP algorithm, based on network and computation power of agents. Designed pipeline message processing and transmission to speed up DPOP. Introduced application-layer forward error coding with customized reliable UDP to provide consistent communication performance under unreliable network.
- **Department of Computer Science and Engineering** — Saint Louis, MO
  Rotation Student, Advisor: Jeremy Buhler, Chien-Ju Ho
  - **Online Resource Allocation Using Primal-dual Techniques** *Nov 2018 - Dec 2018*
    Implemented algorithms to maximize the total system utility (e.g., social welfare) subject to various constraints
  - **Implementation of Minhash Sketch on Mercator** *Oct 2018 - Nov 2018*
    Implemented a parallel algorithm to get minhash sketches with DNA sequences as input on Mercator, a framework to implement irregular streaming applications on NVIDIA GPUs

Programming Skills

- **Languages**: Python, Java, Shell, Mathematica, C/C++
  Frameworks: Kafka, Maven, Jenkins