NAN (MARK) CHEN
(858) 242-9619 | itisnanful@gmail.com | Github: https://github.com/mAsCuLiNe

SUMMARY
- 3 years of part time/full time experience in backend/full stack engineering. Plus 2 years of industrial experience in SQL/database development.
- Expertise in crawling and processing data using Python, lxml, selenium, and multiprocessing.
- Good experience in backend development using Ruby on Rails. Applied various best practices.
- Solid understanding and 3 years of experience with AWS products like EC2, S3, Lambda, RDS, etc.
- Proficient with database internal mechanisms like locking, transactions, index, join, as well as different querying techniques like views, temp tables, stored procedures, CTEs, and triggers.
- Through knowledge and experience of database & query tuning techniques, including networking configuration, proper indexing, execution plans, statistics, partitioning, etc.
- Skilled in Javascript programming and other frontend technologies.

EDUCATION
University of California San Diego, B.S. in Mathematics - Computer Science   Sep 2011 - Dec 2015

PROJECTS
Percoo — Database Specialist and Web Master   Feb 2016 - present
With Technologies: ***Ruby on Rails, PostgreSQL, AWS, SQL, HTML/CSS/Javascript, Framework7***
- Design and normalize a database that holds millions of complex social media information
- Tune queries and tables to achieve more instant user experience in a large database. Worked on Indexing, Query Plans, compiled queries in Views, query result Caching in front-end.
- Calculate, test, and tune Rails's system and networking configurations on AWS cloud to lift performance. In large scale testing on the cloud, one user is able to get instant results of micro posts from millions of records.
- Make querying rules for the other co-workers in order to prevent unexpected behaviors like Dead Lock
- Front-end development of a web app that behaves exactly like iOS applications using Framework7
- Fully utilized Rails partials, Javascript templates, and page-specific Javascript to achieve high performance.

Distributed Data Crawler — Main Developer   Mar 2015 - July 2015
With Technologies: ***Python, bash, MongoDB, Crawling (urllib, selenium, lxml), RabbitMQ, AWS, SQL, IPython, PyCharm***
*A Python-RabbitMQ crawling system with the ability to collect tens of terabytes in days with **minimal cost**.*
Github: https://github.com/mAsCuLiNe/flexibloader
- Designed & implemented the core of the master-slave mechanism, and 16 crawlers, using design pattern. Achieved minimal cost by memory optimization, machine failure retrieval, and deployment acceleration.
- Crawled data from 50+ sites using Python and MongoDB. Applied knowledges of anti-scraping, complex lxml parsing, memory garbage collection, in-page javascript manipulation, logging. Debug using IPython and PyCharm.
- Achievements: Scaled up to 1000 concurrent crawling jobs per second. Completed deploying 90 AWS EC2 Linux machines in 3 secs. Collected 40 million Flickr images (8 TB) in 70 hours with $100. Collected and parsed data from all 1 million Chinese Wikipedia pages in 2 hours with zero cost.

Empachat — Team Leader   Jan 2016 - Mar 2016
*With Technologies: **MeteorJS, MongoDB, Python, AWS***
A chat app that connects users with similar emotions and plays songs of similar emotions
Github: https://github.com/BitTigerInst/Empachat | Website: empachat.meteor.com
- Crawled song metadata and related emotions to build up an Emotion Keyword Network and an Emotion-Song Mapping. Detect users with similar emotions, initiate chat between them, and then recommend songs to them accordingly.
- Design app architecture with comprehensive resource discovery. Manage project using Trello.
- Mentor frontend and backend developers and help tackling hardest bugs

WORKING EXPERIENCE

Full Stack Developer (Part Time) — UCSD Cognitive Science   Mar 2015 - Dec 2015
*With Technologies: **Ruby on Rails, AngularJS, Python, SQL, AWS***
- Developed a set of web-based experiments using Ruby on Rails for face-similarity research. Deploy the experiments on AWS EC2 and manage using Amazon Mechanical Turk.
- Developed a stimuli distributor with Python Web Socket. Github: *https://github.com/mAsCuLiNe/simi_server*
- Data analysis and image processing using MATLAB and Python Matplotlib.

Data Engineer (Part Time & Full Time) — TuSimple Inc.   Jun 2014 - Feb 2015
*With Technologies: **Python, AWS, Linux, SQL***
- Worked with a group of data scientists on a recommendation system based on computer vision.
- Managed 20+ TB data from 30+ sources on Linux file system. Processed > 1TB data daily with Python.
- Developed web element detectors. Achieved 90% precision rate on web image caption detection.
- Implement data labeling tools by using python selenium and by generating in-browser highlights. Achieved image labeling rate of 1800 images per hour per person.
- Automated visualization of webpage-image data via selenium and SQL. 10x faster than visualizing manually.
- Provide IT support on troubleshooting networks, setting up network devices, and writing automation codes.

Database Specialist (Full Time) — Industrial and Commercial Bank of China   Apr 2009 - Jul 2011
*With Technologies: **T-SQL, SQL Server 2008, C#, SSIS***
- Worked on Database applications and Business Intelligence applications, including complex Transact-SQL queries, triggers, stored procedures, CTEs, temp tables, and views on SQL Server.
- Worked on database performance tuning techniques including indexes, execution plans, database normalization, query design, locking and concurrency.
- Devise database partitioning support plans for faster queries.
- Develop SSIS Packages for ETL applications. Wrote C# and LINQ code to complete complex tasks in ETL transformations.Troubleshooted bugs using logging, breakpoints, checkpoints.

TECHNICAL SKILLS

Language:	Python, Java, Ruby, C++/C, MATLAB, C#
Database:	PostgreSQL, MySQL, ActiveRecord, MongoDB, T-SQL, SQL Server 2012
Cloud & System:	AWS EC2/S3/RDS/Lambda, Linux, RabbitMQ, Heroku, Google App Engine
Web development:	HTML5/CSS3/JavaScript, Ruby on Rails, AngularJS, NodeJS, JQuery, Django, MeteorJS
Concepts:	REST, ACID, Database design, Design pattern, SQL/Database optimization