Yuchao Jiang

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LinkedIn | GitHub | Google Scholar

Objective: Seeking for a Software Engineer/Research Scientist position starting immediately

Programming Skills

- Quick prototyping with Matlab and Python.
- Data acquisition by Labview.
- Object-oriented design in Java and C++.
- Database technology: SQLite and PostgreSQL.
- Web development: HTML/CSS/JavaScript.

Researching Skills

- Comprehensive understanding of semiconductor device physics and optoelectronics.
- Demonstrated capability of semiconductor device modeling, characterization and data analyzing.
- In-depth knowledge of quantum engineering, rate equation and waveguide optimization.
- Demonstrated experience with numerical techniques for non-linear systems.

Project Experiences

Research Assistant, Aug. 2010 to May 2016 @ University of Oklahoma, Norman, OK

- First demonstration of diode lasers with cw operations above room temperature at $\lambda \sim 4.6$ μm & $\lambda \sim 3.2$ μm:
  - Developed an efficient algorithm to evaluate design structure to predict the laser performance.
  - Built a testing standard to extract the core information and provide timely feedback to team member.
  - The outstanding results have been reported as "research highlight" in Nature Photonics.
- Achieved a large electrical tunable range (280 cm^{-1}) in interband cascade lasers:
  - Implemented a novel active region structure utilizing the Stark effect.
  - Developed a comprehensive model including band engineering and rate equation to interpret results.
- High-frequency operation of a mid-infrared interband cascade system at room temperature:
  - Developed an efficient model to calculate the band structure of the absorber.
  - Implemented Krony-Penny model and Kane's two-band model for quick prototyping.

Research Achievements

- Reviewer for 3 peer-reviewed journals: J. of App. Phys., Appl. Optics, IEEE Photonics Journal
- Authored/co-authored 14 peer-reviewed papers (Google Scholar, citations: 87)
- Gave 2 oral presentations at Conference on Lasers and Electro-Optics, in 2012 & 2015
- Held 2 patents on the design and fabrication techniques of semiconductor lasers

Education

Ph.D. in Electrical & Computer Engineering, May 2016 @ University of Oklahoma, Norman, OK

Rewards

- ECE Department Scholarship, 2010-2011
- ECE Journal Paper Awards, 2014 & 2015