RUNZE CHEN

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PROFILE

A highly driven, proactive and goal-oriented individual with educational experience in Computer Science and Nano-optics, I have a range of research experience including ultrafast nano-optics, artificial intelligence, neuromorphic computing, spintronics and micromagnetics. I also possess a proven record of delivering high-quality results, and am comfortable working alone or as part of a diverse team.

EDUCATION

University of Manchester, Manchester, UK *Sept. 2018 - Sept. 2022*
PhD Candidate in Computer Science
Department of Computer Science, School of Engineering

National University of Defense Technology, Changsha, China *Sept. 2015 - Dec. 2017*
M.Eng of Engineering, Computer Science and Technology. **GPA: 88.5/100**
Organization: Interdisciplinary Center for Quantum Information (ICQI)

National University of Defense Technology, Changsha, China *June 2015 - Sept. 2011*
B.Eng of Engineering, Computer Science and Technology. **GPA: 90.7/100**
Organization: State key Laboratory of High Performance Computing (HPCL)

PROJECTS

Research on ultrafast spin and valley polarization properties of excited carrier dynamics in two-dimensional (2D) semiconductors. *Oct. 2016 - Sept. 2017*
a) Designed and implemented an optical experimental system based on LabVIEW. The system has been applied for utility model patent.
b) Researched and analyzed the potential of application 2D materials in quantum computing, spintronics and valleytronics.

Research on Optical Nonlinear Properties of 2D Nano-materials for the sake of Improving Photonic Neural Network. *Oct. 2015 - May 2016*
a) Research on improving the Neuromorphic Silicon Photonics on Hopfield neural network by using 2D nonlinear optical materials.
b) Awarded the Excellent graduation Thesis of National University of Defense Technology.

Research on an Intelligent and Secure Express System based of NFC Authentication Strategy. (Marked as 1st Prize in National Information Security Contest) *Aug. 2014 - Mar. 2014*
a) Designed and implemented a server-client system for parcel express companies.
b) The system includes near field communication (NFC) stickers which cryptographically stores the key information of users and delivery addresses, software system and database system distributing at client-end and server-end, respectively.

Anti-Leakage System of Sensitive Information on Android Platform. (Marked as Excellent in the National Undergraduate Innovation Programs) *May 2013 - June 2014*
Modified the source code of Android operating system (JAVA and C++) and constructed a Front-End system by JAVA to realize real-time monitoring of users sensitive information in smartphones.

TECHNICAL STRENGTHS

Programming	C/C++, Python, Matlab, JAVA, LabVIEW, Go, Verilog
Data Visualisation	Origin Pro, Matplotlib, 3ds Max, Paraview
Tools & Software	Git, VS Code, Sublime, Adobe Illustrator, Microsoft, Autodesk
Video Editing	Final cut pro X, Compressor, Adobe premiere

PUBLICATIONS

[13] Daniel S. Han, Nickolay Korabel, **Runze Chen**, Mark Johnston, Viki J. Allan, Sergei Fedotov, and Thomas A. Waigh, **Deciphering anomalous heterogeneous intracellular transport with neural networks**, *bioRxiv*:doi.org/10.1101/777615. [Link]

[12] Ke Wei, Tian Jiang, Zhongjie Xu, Junhu Zhou, Jie You, Yuxiang Tang, Han Li, **Runze Chen**, Xin Zheng, Shanshan Wang, Ke Yin, Zhenyu Wang, Jun Wang, and Xiang'ai Cheng, **Ultrafast Carrier Transfer Promoted by Interlayer Coulomb Coupling in 2D/3D Perovskite Heterostructures**, *Lasers & Photonics Reviews* **12**, 1800128 (2018). [Link]

[11] Tian Jiang, **Runze Chen**(Co-1st Author), Xin Zheng, Zhongjie Xu, and Yuhua Tang, **Photo-Induced Excitonic Structure Renormalization and Broadband Absorption in Monolayer Tungsten Disulphide**, *Optics Express* **26**(2), 859-869 (2018). [Link]

[10] Jun Zhang, Hao Ouyang, Xin Zheng, Jie You, **Runze Chen**, Tong Zhou, Yizhen Sui, Yu Liu, Xiangai Cheng, and Tian Jiang, **Ultrafast saturable absorption of MoS_2 nanosheets under different pulse-width excitation conditions**, *Optics Letters* **43**(2), 243-246 (2017). [Link]

[9] Lan Yang, Ke Wei, Zhongjie Xu, Feiming Li, **Runze Chen**, Xin Zheng, Xiangai Cheng, and Tian Jiang, **Nonlinear absorption and temperature-dependent fluorescence of perovskite $FAPbBr_3$ nanocrystal**, *Optics Letters* **43**(1), 122-125 (2017). [Link]

[8] **Runze Chen**, Xin Zheng, and Tian Jiang, **Broadband Ultrafast Nonlinear Absorption and Ultra-Long Exciton Relaxation Time of Black Phosphorus Quantum Dots**, *Optics Express* **25**(7) (2017). [Link]

[7] **Runze Chen**, Yuhua Tang, Xin Zheng, and Tian Jiang, **Giant Nonlinear Absorption and Excited Carrier Dynamics of Black Phosphorus Few-Layer Nanosheets in Broadband Spectra**, *Applied Optics* **55**(36) (2016). [Link]

[6] Ke Wei, Zhongjie Xu, **Runze Chen**, Xin Zheng, Xiangai Cheng, and Tian Jiang, **Temperature-Dependent Excitonic Photoluminescence Excited by Two-Photon Absorption in Perovskite $CsPbBr_3$ Quantum Dots**, *Optics Letters* **41**(16) (2016). [Link]

[5] **Runze Chen**, Xin Zheng, Yangwei Zhang, Yuhua Tang, and Tian Jiang, **Z-Scan Measurement of Nonlinear Optical Properties of BiOCl Nanosheets**, *Applied Optics* **54**(21) (2015). [Link]

[4] Zheng, Xin, **Runze Chen**, Gang Shi, Jianwei Zhang, Zhongjie Xu, Xiangai Cheng, and Tian Jiang, **Characterization of Nonlinear Properties of Black Phosphorus Nanoplatelets with Femtosecond Pulsed Z-Scan Measurements**, *Optics Letters* **40**(15) (2015). [Link]

[3] Zheng, Xin, Yangwei Zhang, **Runze Chen**, Xiangai Cheng, Zhongjie Xu, and Tian Jiang, **Z-Scan Measurement of the Nonlinear Refractive Index of Monolayer WS_2**, *Optics Express* **23**(12) (2015). [Link]

[2] **Runze Chen**, Sijin Li, Huisheng Mao, and Fan Zhang, **Research on anti-leakage system of sensitive information based on Android platform**(in Chinese), *Network Security Technology & Application* **4** (2014). [Link]

[1] **Runze Chen**, Sijin Li, Huisheng Mao, and Jianglong Song, **Design and implementation of five level pipelined general processor based on Verilog programming**(in Chinese), *Electronic Technology & Software Engineering* **5** (2014). [Link]