## **XUAN LIU**

(Curriculum Vitae, Updated on Nov, 2024)

	, Opuated on Nov, 2024)			
CONTACT INFORMATION	102 Durham Hall, 1145 Perry Street Virginia Tech, Blacksburg, VA, 24060	PHONE EMAIL HOMEPAGE	+1 (540)239-8135 xuanliu@vt.edu xuanliu2000.github.io	
RESEARCH INTERESTS	Machine learning and AI-based cyber-physical manufacturing systems, Diffusion Model, Multimodal Learning , Transfer Learning			
EDUCATION	Virginia Polytechnic Institute and State University (Virginia Tech) Ph. D. in Industrial Engineering, Advisor: Prof. Zhenyu (James) Kong		Blacksburg, VA, USA Aug 2024 - Present	
	Xi'an Jiaotong University (XJTU)Xi'an, Shaanxi, ChinaM.Eng in Mechanical Engineering, Advisor: Prof. Jinglong ChenSep 2021 - Jun 2024- Thesis: Research on Anomaly Detection and Key Component Fault Diagnosis of Bogie System under Time-varying Unsteady Conditions (Outstanding Thesis, Top 5%)			
	<b>Xi'an Jiaotong University (XJTU)</b> B.Eng in Mechanical Engineering (Major, GPA: 87.15, 7 B.Eng in Computer Science and Technology (Minor, GP	Top10%) ?A: 88.97)	<b>Xi'an, Shaanxi, China</b> Aug 2017 - Jun 2021 May 2019 - Jun 2021	
PUBLICATIONS	JOURNAL PUBLICATIONS(* equal contribution)			
	[ <b>J4</b> ] <b>X. Liu</b> , J. Chen, J. Xie, Y. Chang. "Generating HSR Bogie Vibration Signals via Pulse Voltage-Guided Conditional Diffusion Model". <i>IEEE Transactions on Intelligent Transportation Systems</i> , November, 2024.			
	[J3] Z. Li*, X. Liu*, J. Chen, K. Zhang. "Intelligent Fault Diagnosis under Imbalanced Multivariate Work- ing Conditions Leveraging Dynamic Unsupervised Domain Adaptation with Sample and Margin Reg- ularization". <i>Measurement Science and Technology</i> , April, 2024.			
	[J2] Z. Shi, X. Liu, J. Chen, Y. Zi, Z. Zhou. "A multi-branch redundant adversarial net for intelligent fault diagnosis of multiple components under drastically variable speeds". <i>ISA transactions</i> , Jan 2022.			
	[J1] X. Liu, J. Chen, K. Zhang, S. Liu, S. He, Z. Zhou. "Cross-domain intelligent bearing fault diagnosis under class imbalanced samples via transfer residual network augmented with explicit weight self-assignment strategy based on meta data". <i>Knowledge-Based Systems</i> , June 2022.			
WORKING	SMART Lab, Virginia Tech		Blacksburg, VA, USA	
EXPERIENCE	Graduate Research Assistant, Advisor: Prof. Zhenyu ()	ames) Kong	Sept 2024 - Present	
	• Conduct research on machine learning methods for cyber-physical manufacturing systems			
	State Key Laboratory for Manufacturing Systems En Graduate Research Assistant, Advisor: Prof. Jinglong (	ngineering, XJTU Chen	Xi'an, Shaanxi, China Sept 2020 - Jun 2024	
	• Explore solutions to adapting diagnostic models in unlabeled and imbalanced scenarios across var- ious operational conditions			
	• Publish 4 research papers related to machines fault of	diagnosis		
TEACHING	Graduate Teaching Assistant			
EXPERIENCE	ISE4004, Theory of Organization, Virginia Tech Modern Signal Processing Techniques and Its Applicati	ons, XJTU	Aug 2024 - Dec 2024 Sep 2023 - Jan 2024	
PROJECTS AND	Low-Cost Remote Control Servo Quadruped Robot		Nov 2020 - Jan 2021	
COMPETITIONS	Product Design and Development Course, advised by	Prof. Dun Lv		
	• Deploy an eight-servo quadrupedal gait with pitch c	ontrol		

	Leader, Mechanism Desi	<i>gn</i> , advised by <b>Sr. Eng. Liang Gui</b>		
	$\bullet$ National $1^{st}$ Prize in National College Student Mechanical Design Innovation Compet			
	• Design a biomimetic fl	exible protection mechanism that adapts to fit the h	uman back for protection	
	• Design a lifting mecha Check mechanical stren	anism(via Solidworks) suitable for the natural curvature of human body and gth(via Ansys)		
	<b>RoboCon China Colleg</b> <i>Mechanism Design</i> , advi	<b>e Robot Competition</b> sed by <b>Prof. Jun Xu</b>	Sep 2018 - Jun 2019	
	<ul> <li>National 1<sup>st</sup> Prize of RoboCon China College Robot Competition</li> <li>Design and fabricate two competition-ready robots (Including wheeled mobility, obstacle navigation, and projectile tasks, achieving all tasks under 1 min)</li> <li>Mechanism design(via Solidworks, AutoCad) and fabrication (via 3D print, CNC)</li> </ul>			
HONORS AND	Graduate Fellowship, Gr	ado Department of Industrial and Systems Engineer	ring 2024	
AWARDS	QU&HE Fault Diagnosis	Scholarship	2021	
	Outstanding Graduate S	tudent, Xi'an Jiaotong University	2021	
	SMC Scholarships	an liaotong University	2019	
	Merit Student, Xi'an Jiao	tong University	2018, 2020, 2022, 2023	
		long officially	2010, 2020	
SERVICE	Reviewer for IEEE Trans	actions on Intelligent Transportation Systems	2024	
	Educator Volunteer for Junior High school students, Shangluo, Henan		2022	
	University Admissions Assistant, Xi'an Jiaotong University		2021	
	Class Student Represent	ative, Xi'an Jiaotong University	2019	
	Educator volunteer for )	unior righ school students, Llantang, Jiangxi	2018	
SKILLS	Programming Mechanical Design	Python (PyTorch), MATLAB, <i>ET<sub>E</sub>X</i> , C/C++, Linux (U SolidWorks, AutoCAD, Inventor, ANSYS	Jbuntu), R	
	Languages	Mandarin (Native), English (Fluent)		

• Implement a bluetooth-enabled remote control system with a corresponding mobile application

Aug 2019 - Nov 2020

• Mechanism design (via Solidworks) and fabrication (via 3D print)

Indoor Assistive Robot for Elderly People

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