John Kim

List of Publications by Citations

185 papers	19,578 citations	55 h-index	139 g-index
205 ext. papers	22,185 ext. citations	3.5 avg, IF	6.73 L-index

#	Paper	IF	Citations
185	Turbulence statistics in fully developed channel flow at low Reynolds number. *Journal of Fluid Mechanics*, **1987**, 177, 133-166	3.7	3384
184	Application of a fractional-step method to incompressible Navier-Stokes equations. *Journal of Computational Physics*, **1985**, 59, 308-323	4.1	2119
183	Direct numerical simulation of turbulent channel flow up to Re□590. *Physics of Fluids*, **1999**, 11, 943-945	4.4	1811
182	Numerical investigation of turbulent channel flow. *Journal of Fluid Mechanics*, **1982**, 118, 341	3.7	850
181	Direct numerical simulation of turbulent flow over a backward-facing step. *Journal of Fluid Mechanics*, **1997**, 330, 349-374	3.7	724
180	Regeneration mechanisms of near-wall turbulence structures. *Journal of Fluid Mechanics*, **1995**, 287, 317-348	3.7	640
179	Reynolds-stress and dissipation-rate budgets in a turbulent channel flow. *Journal of Fluid Mechanics* , **1988**, 194, 15	3.7	557
178	Active turbulence control for drag reduction in wall-bounded flows. *Journal of Fluid Mechanics*, **1994**, 262, 75-110	3.7	491
177	Coherent structures near the wall in a turbulent channel flow. *Journal of Fluid Mechanics*, **1997**, 332, 185-214	3.7	469
176	Direct numerical simulation of turbulent flow over riblets. *Journal of Fluid Mechanics*, **1993**, 255, 503	3.7	459
175	A detailed and flexible cycle-accurate Network-on-Chip simulator **2013**,		304
174	A numerical study of turbulent supersonic isothermal-wall channel flow. *Journal of Fluid Mechanics*, **1995**, 305, 159-183	3.7	291
173	Structure of turbulence at high shear rate. *Journal of Fluid Mechanics*, **1990**, 216, 561-583	3.7	286
172	A Linear Systems Approach to Flow Control. *Annual Review of Fluid Mechanics*, **2007**, 39, 383-417	22	274
171	Technology-Driven, Highly-Scalable Dragonfly Topology **2008**,		244
170	Effects of hydrophobic surface on skin-friction drag. *Physics of Fluids*, **2004**, 16, L55-L58	4.4	231
169	New approximate boundary conditions for large eddy simulations of wall-bounded flows. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 1061-1068		207

168	On the structure of pressure fluctuations in simulated turbulent channel flow. *Journal of Fluid Mechanics*, **1989**, 205, 421	3.7	203
167	Application of neural networks to turbulence control for drag reduction. *Physics of Fluids*, **1997**, 9, 1740-1747	4.4	202
166	The structure of the vorticity field in turbulent channel flow. Part 1. Analysis of instantaneous fields and statistical correlations. *Journal of Fluid Mechanics*, **1985**, 155, 441	3.7	193
165	Low-Reynolds-number effects in a fully developed turbulent channel flow. *Journal of Fluid Mechanics*, **1992**, 236, 579-605	3.7	187
164	Firefly **2009**,		180
163	Flattened butterfly **2007**,		180
162	Turbulent boundary layer control utilizing the Lorentz force. *Physics of Fluids*, **2000**, 12, 631-649	4.4	162
161	Propagation velocity of perturbations in turbulent channel flow. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 695-706		162
160	Feedback control for unsteady flow and its application to the stochastic Burgers equation. *Journal of Fluid Mechanics*, **1993**, 253, 509	3.7	160
159	A systems theory approach to the feedback stabilization of infinitesimal and finite-amplitude disturbances in plane Poiseuille flow. *Journal of Fluid Mechanics*, **1997**, 332, 157-184	3.7	148
158	Suboptimal control of turbulent channel flow for drag reduction. *Journal of Fluid Mechanics*, **1998**, 358, 245-258	3.7	148
157	Flattened Butterfly Topology for On-Chip Networks **2007**,		146
156	Control of turbulent boundary layers. *Physics of Fluids*, **2003**, 15, 1093-1105	4.4	139
155	Some characteristics of small-scale turbulence in a turbulent duct flow. *Journal of Fluid Mechanics*, **1991**, 233, 369-388	3.7	131
154	The structure of the vorticity field in turbulent channel flow. Part 2. Study of ensemble-averaged fields. *Journal of Fluid Mechanics*, **1986**, 162, 339	3.7	128
153	Effect of Roughness on Wall-Bounded Turbulence. *Flow, Turbulence and Combustion*, **2004**, 72, 463-492	2.5	124
152	On the numerical solution of time-dependent viscous incompressible fluid flows involving solid boundaries. *Journal of Computational Physics*, **1980**, 35, 381-392	4.1	124
151	A numerical study of the effects of superhydrophobic surface on skin-friction drag in turbulent channel flow. *Physics of Fluids*, **2013**, 25, 110815	4.4	122

150	Evolution and dynamics of shear-layer structures in near-wall turbulence. *Journal of Fluid Mechanics* , **1991**, 224, 579-599	3.7	115
149	FlexiShare: Channel sharing for an energy-efficient nanophotonic crossbar **2010**,		113
148	Sustained sub-laminar drag in a fully developed channel flow. *Journal of Fluid Mechanics*, **2006**, 558, 309	3.7	98
147	A linear process in wall-bounded turbulent shear flows. *Physics of Fluids*, **2000**, 12, 1885-1888	4.4	97
146	Low-cost router microarchitecture for on-chip networks **2009**,		93
145	**2014**,		92
144	The dimension of attractors underlying periodic turbulent Poiseuille flow. *Journal of Fluid Mechanics*, **1992**, 242, 1-29	3.7	91
143	Low-Reynolds-number effects on near-wall turbulence. *Journal of Fluid Mechanics*, **1994**, 276, 61-80	3.7	88
142	Tackling Turbulence with Supercomputers. *Scientific American*, **1997**, 276, 62-68	0.5	82
141	Throughput-Effective On-Chip Networks for Manycore Accelerators **2010**,		78
140	Physics and control of wall turbulence for drag reduction. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2011**, 369, 1396-411	3	77
139	Achieving predictable performance through better memory controller placement in many-core CMPs **2009**,		76
138	Evolution of a curved vortex filament into a vortex ring. *Physics of Fluids*, **1986**, 29, 955		75
137	On the structure of wall-bounded turbulent flows. *Physics of Fluids*, **1983**, 26, 2088		71
136	Isotropy of the small scales of turbulence at low Reynolds number. *Journal of Fluid Mechanics*, **1993** , 251, 219-238	3.7	66
135	A numerical study of compressible turbulent boundary layers. *Physics of Fluids*, **2011**, 23, 015106	4.4	65
134	Effects of hydrophobic surface on stability and transition. *Physics of Fluids*, **2005**, 17, 108106	4.4	62
133	Application of reduced-order controller to turbulent flows for drag reduction. *Physics of Fluids*, **2001**, 13, 1321-1330	4.4	62

132	Near-wall k-epsilon turbulence modeling. *AIAA Journal*, **1989**, 27, 1068-1073	2.1	61
131	Numerical simulations of turbulent spots in plane Poiseuille and boundary-layer flow. *Physics of Fluids*, **1987**, 30, 2914		61
130	Indirect adaptive routing on large scale interconnection networks **2009**,		55
129	On the shape and dynamics of wall structures in turbulent channel flow. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 764-766		51
128	Turbulence structures associated with the bursting event. *Physics of Fluids*, **1985**, 28, 52-58		48
127	Control of the viscous sublayer for drag reduction. *Physics of Fluids*, **2002**, 14, 2523	4.4	44
126	Flattened Butterfly Topology for On-Chip Networks. *IEEE Computer Architecture Letters*, **2007**, 6, 37-40	1.8	43
125	HPCCD: Hybrid Parallel Continuous Collision Detection using CPUs and GPUs. *Computer Graphics Forum*, **2009**, 28, 1791-1800	2.4	42
124	A numerical study of strained three-dimensional wall-bounded turbulence. *Journal of Fluid Mechanics*, **2000**, 416, 75-116	3.7	39
123	Moderating effects of prior knowledge on the perceived diagnosticity of beliefs derived from implicit versus explicit product claims. *Journal of Business Research*, **1994**, 29, 219-224	8.7	39
122	A numerical study of local isotropy of turbulence. *Physics of Fluids*, **1994**, 6, 834-841	4.4	38
121	On the effect of riblets in fully developed laminar channel flows. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1892-1896		38
120	Energy-Efficient Dynamic Packet Downloading for Medical IoT Platforms. *IEEE Transactions on Industrial Informatics*, **2015**, 11, 1653-1659	11.9	37
119	. *IEEE Micro*, **2009**, 29, 33-40	1.8	36
118	Finite Dimensional Optimal Control of Poiseuille Flow. *Journal of Guidance, Control, and Dynamics*, **1999**, 22, 340-348	2.1	36
117	A singular value analysis of boundary layer control. *Physics of Fluids*, **2004**, 16, 1980-1988	4.4	35
116	Skin-friction Drag Reduction Via Robust Reduced-order Linear Feedback Control. *International Journal of Computational Fluid Dynamics*, **1998**, 11, 79-92	1.2	34
115	A numerical study of three-dimensional wall-bounded flows. *International Journal of Heat and Fluid Flow*, **1996**, 17, 333-342	2.4	34

114	Exploring concentration and channel slicing in on-chip network router **2009**,		32
113	Control and system identification of a separated flow. *Physics of Fluids*, **2008**, 20, 101509	4.4	32
112	Overcoming far-end congestion in large-scale networks **2015**,		30
111	TalkBetter **2014**,		30
110	Effects of the air layer of an idealized superhydrophobic surface on the slip length and skin-friction drag. *Journal of Fluid Mechanics*, **2016**, 790,	3.7	29
109	Galaxy **2014**,		28
108	Multi-GPU System Design with Memory Networks **2014**,		28
107	Probabilistic Distance-Based Arbitration: Providing Equality of Service for Many-Core CMPs **2010**,		28
106	A Hybrid-Filter Approach to Turbulence Simulation. *Flow, Turbulence and Combustion*, **2010**, 85, 421-441	2.5	28
105	Direct numerical simulation of a decelerated wall-bounded turbulent shear flow. *Journal of Fluid Mechanics*, **2003**, 495, 1-18	3.7	26
104	Router microarchitecture and scalability of ring topology in on-chip networks **2009**,		24
103	Stability of a channel flow subject to wall blowing and suction in the form of a traveling wave. *Physics of Fluids*, **2008**, 20, 101513	4.4	24
102	Scaling of the bursting frequency in turbulent boundary layers at low Reynolds numbers. *Physics of Fluids*, **1987**, 30, 3326		24
101	Exploiting New Interconnect Technologies in On-Chip Communication. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2012**, 2, 124-136	5.2	23
100	Predictions of the effective slip length and drag reduction with a lubricated micro-groove surface in a turbulent channel flow. *Journal of Fluid Mechanics*, **2019**, 874, 797-820	3.7	22
99	Clumsy Flow Control for High-Throughput Bufferless On-Chip Networks. *IEEE Computer Architecture Letters*, **2013**, 12, 47-50	1.8	21
98	Providing cost-effective on-chip network bandwidth in GPGPUs **2012**,		20
97	Interconnect routing and scheduling---Adaptive routing in high-radix clos network **2006**,		20

96	Near-wall turbulence structures in three-dimensional boundary layers. *International Journal of Heat and Fluid Flow*, **2000**, 21, 480-488	2.4	20
95	Steady flow past sudden expansions at large Reynolds number. II. Navier–Stokes solutions for the cascade expansion. *Physics of Fluids*, **1987**, 30, 7		20
94	On the Origin of Streaks in Turbulent Shear Flows **1993**, 37-49		20
93	Large-scale motions in a turbulent channel flow with the slip boundary condition. *International Journal of Heat and Fluid Flow*, **2016**, 61, 96-107	2.4	20
92	Numerical investigation of instability and transition in rotating plane Poiseuille flow. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 633-641		19
91	Progress in pipe and channel flow turbulence, 1961–2011. *Journal of Turbulence*, **2012**, 13, N45	2.1	18
90	FeatherWeight **2011**,		18
89	Effect of roughness on pressure fluctuations in a turbulent channel flow. *Physics of Fluids*, **2007**, 19, 028103	4.4	18
88	Accelerating Linked-list Traversal Through Near-Data Processing **2016**,		17
87	Impact of consumers' confidence in judgements about missing information on product evaluations. *Journal of Business Research*, **1992**, 25, 215-229	8.7	17
86	On the secondary instability in plane Poiseuille flow. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 775-777		17
85	MGPUSim **2019**,		16
84	On the effects of nonequilibrium on the subgrid-scale stresses. *Physics of Fluids*, **1997**, 9, 2740-2748	4.4	16
83	Microbank: Architecting Through-Silicon Interposer-Based Main Memory Systems **2014**,		15
82	High Performance Datacenter Networks: Architectures, Algorithms, and Opportunities. *Synthesis Lectures on Computer Architecture*, **2011**, 6, 1-115	2.9	15
81	Near-wall dynamics of compressible boundary layers. *Physics of Fluids*, **2011**, 23, 065109	4.4	14
80	Network within a network approach to create a scalable high-radix router microarchitecture **2012**,		13
79	The Impact of Inferences on Product Evaluations: Replication and Extension. *Journal of Marketing Research*, **1988**, 25, 308	5.2	13

78	Superhydrophobic drag reduction in high-speed towing tank. *Journal of Fluid Mechanics*, **2021**, 908,	3.7	13
77	On turbulent spots in plane Poiseuille flow. *Journal of Fluid Mechanics Digital Archive*, **1991**, 228, 183		12
76	Profiling DNN Workloads on a Volta-based DGX-1 System **2018**,		12
75	TalkLIME **2016**,		11
74	Control of streamwise vortices with uniform magnetic fluxes. *Physics of Fluids*, **1998**, 10, 1997-2005	4.4	11
73	UMH. *Transactions on Architecture and Code Optimization*, **2016**, 13, 1-25	1.3	11
72	Transportation-network-inspired network-on-chip **2014**,		9
71	Low-Overhead Network-on-Chip Support for Location-Oblivious Task Placement. *IEEE Transactions on Computers*, **2014**, 63, 1487-1500	2.5	9
70	Numerical Study of Hypersonic Receptivity with Thermochemical Non-Equilibrium on a Blunt Cone **2010**,		9
69	Evolution of a Vortical Structure Associated with the Bursting Event in a Channel Flow **1987**, 221-233		9
68	Contention-based congestion management in large-scale networks **2016**,		9
67	**2016**,		9
66	Itchtector **2017**,		8
65	Robot-based augmentative and alternative communication for nonverbal children with communication disorders **2014**,		8
64	BebeCODE **2018**,		7
63	Designing on-chip networks for throughput accelerators. *Transactions on Architecture and Code Optimization*, **2013**, 10, 1-35	1.3	7
62	A Numerical Study of Purdue\'s Mach 6 Tunnel with a Roughness Element **2009**,		7
61	Direct numerical simulation of strained three-dimensional wall-bounded flows. *Experimental Thermal and Fluid Science*, **1996**, 13, 239-251	3	7

60	An Eddy Viscosity Calculation Method for a Turbulent Duct Flow. *Journal of Fluids Engineering, Transactions of the ASME*, **1991**, 113, 616-619	2.1	7
59	Cost-Efficient Dragonfly Topology for Large-Scale Systems **2009**,		7
58	Automatically Exploiting Implicit Pipeline Parallelism from Multiple Dependent Kernels for GPUs **2016**,		7
57	Design and Analysis of Hybrid Flow Control for Hierarchical Ring Network-on-Chip. *IEEE Transactions on Computers*, **2016**, 65, 480-494	2.5	6
56	Evaluation of Performance Unfairness in NUMA System Architecture. *IEEE Computer Architecture Letters*, **2017**, 16, 26-29	1.8	6
55	Scalable high-radix router microarchitecture using a network switch organization. *Transactions on Architecture and Code Optimization*, **2013**, 10, 1-25	1.3	6
54	On-Chip Network Evaluation Framework **2010**,		6
53	Towards Interpersonal Assistants: Next-Generation Conversational Agents. *IEEE Pervasive Computing*, **2019**, 18, 21-31	1.3	5
52	Memory-centric system interconnect design with Hybrid Memory Cubes **2013**,		5
51	Extending bufferless on-chip networks to high-throughput workloads **2014**,		5
50	How streamwise rolls and streaks self-sustain in a shear flow. II **1998**,		5
49	The Effects of Superhydrophobic Surfaces on Skin Friction Drag. *ERCOFTAC Series*, **2016**, 357-365	0.1	5
48	Mobile System Design for Scratch Recognition **2015**,		4
47	Griffin: Hardware-Software Support for Efficient Page Migration in Multi-GPU Systems **2020**,		4
46	Footprint **2017**,		4
45	Security Vulnerability in Processor-Interconnect Router Design **2014**,		4
44	Scheduling in heterogeneous computing environments for proximity queries. *IEEE Transactions on Visualization and Computer Graphics*, **2013**, 19, 1513-25	4	4
43	Numerical Study of Hypersonic Flow Over an Isolated Roughness with a High-Order Cut-Cell Method **2011**,		4

42	An Alternative Memory Access Scheduling in Manycore Accelerators **2011**,		4
41	On-chip network design considerations for compute accelerators **2010**,		4
40	Leveraging torus topology with deadlock recovery for cost-efficient on-chip network **2011**,		4
39	Analyzing the impact of on-chip network traffic on program phases for CMPs **2009**,		4
38	Active control of turbulent boundary layers for drag reduction **1999**, 142-152		4
37	NeuMMU **2020**,		4
36	**2018**,		4
35	State-Space Approximations of the Orr-Sommerfeld System with Boundary Inputs and Outputs. *Journal of Guidance, Control, and Dynamics*, **2010**, 33, 794-802	2.1	3
34	Reduced Balancing Transformations for Large Nonnormal State-Space Systems. *Journal of Guidance, Control, and Dynamics*, **2012**, 35, 129-137	2.1	3
33	Similarity between turbulent kinetic energy and temperature spectra in the near-wall region. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 989-991		3
32	Optimal disturbances in the near-wall region of turbulent channel flows. *Physical Review Fluids*, **2016**, 1,	2.8	3
31	Valkyrie **2020**,		3
30	Effects of Robot and Computer-based Intervention on Learning Action Word Symbols of AAC for Children with Autism Spectrum Disorder. *Communication Sciences and Disorders*, **2016**, 21, 744-759	0.6	3
29	A high-order multi-zone cut-stencil method for numerical simulations of high-speed flows over complex geometries. *Journal of Computational Physics*, **2016**, 316, 652-681	4.1	3
28	SuperSim: Extensible Flit-Level Simulation of Large-Scale Interconnection Networks **2018**,		3
27	DeepHiR **2019**,		2
26	Navigator: Dynamic Multi-kernel Scheduling to Improve GPU Performance **2020**,		2
25	TCEP: Traffic Consolidation for Energy-Proportional High-Radix Networks **2018**,		2

24	Mutually Aware Prefetcher and On-Chip Network Designs for Multi-Cores. *IEEE Transactions on Computers*, **2014**, 63, 2316-2329	2.5	2
23	Energy-efficient scheduling for memory-intensive GPGPU workloads **2014**,		2
22	PlayBetter **2017**,		2
21	Scalable on-chip network in power constrained manycore processors **2012**,		2
20	Approximating age-based arbitration in on-chip networks **2010**,		2
19	Efficient Topologies for Large-scale Cluster Networks **2010**,		2
18	Two-point velocity and vorticity correlations for axisymmetric turbulence. *Physics of Fluids*, **1996**, 8, 838-840	44	2
17	Practical and efficient incremental adaptive routing for HyperX networks **2019**,		2
16	Adaptive and flexible key-value stores through soft data partitioning **2016**,		2
15	Lexical Representation of Emotions for High Functioning Autism(HFA) via Emotional Story Intervention using Smart Media **2015**,		1
14	Numerical Simulation of High-Speed Flows Over Complex Geometries with a High-Order Multi-Zone Cut-Cell Method **2014**,		1
13	Application of the Ggoore Scheme to turbulence control for drag reduction (I). *Journal of Mechanical Science and Technology*, **2001**, 15, 1572-1579		1
12	Application of the Goore Scheme to turbulence control for drag reduction (II). *Journal of Mechanical Science and Technology*, **2001**, 15, 1580-1587		1
11	LOX Framework: Designing Human Computation Games to Update Street Views. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, **2014**, 233-251	0.2	1
10	Active Control of Turbulent Boundary Layers for Drag Reduction. *Fluid Mechanics and Its Applications*, **1999**, 329-336	0.2	1
9	Taming Near-Wall Streamwise Vortices: A Modus Operandi for Boundary Layer Control. *Fluid Mechanics and Its Applications*, **1999**, 3-14	0.2	1
8	Turbulent Characteristics inside a Turbulent Spot in a Plane Poiseuille Flow **1991**, 155-165		1
7	Controller Synthesis for Periodic, Linear-Distributed Parameter Systems: Channel Flow Application. *Journal of Guidance, Control, and Dynamics*, **2015**, 38, 993-1000	2.1	

6	Preface to Special Topic: Directions in computational physicsSelected papers from a symposium honoring Parviz Moin upon his 60th birthday. *Physics of Fluids*, **2013**, 25, 110701	4.4
5	Guest Editorial New Interconnect Technologies in On-Chip Communication. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2012**, 2, 121-123	5.2
4	The 14th biennial Center for Turbulence Research Summer Program. *Physics of Fluids*, **2012**, 24, 100501	4.4
3	Analysis and Control of Boundary Layers: A Linear System Perspective. *Solid Mechanics and Its Applications*, **2006**, 301-312	0.4
2	TAMING TURBULENCE **1998**, 907-913	
1	Numerical Investigation of a Vortical Structure in a Wall-Bounded Shear Flow **1986**, 177-180	