

# ISAAC 2022 Program

12/18

SUNDAY

December 18 (KST)	Dining room next to room 612
18:00 - 20:00	Welcome Reception

12/19

MONDAY

GMT	EST	PST	December 19 (KST)	Room 612	Room 608
			8:30 - 9:00	Registration	
0:00	19:00	16:00	9:00 - 10:00	Invited Talk 1 (online) at Room 612 (Chair: Kunsoo Park)	
	12/18	12/18		Succinct Representations of Graphs Kunihiko Sadakane* (University of Tokyo)	
			10:00 - 10:20	Coffee/Tea Break	
1:20	20:20	17:20	10:20 - 10:45	Session 1A (Chair: Seungbum Jo)	Session 1B (Chair: Akiyoshi Shioura)
	12/18	12/18		Data Structures 1 (online)	Approximation 1 (online)
			10:45 - 11:10	Succinct List Indexing in Optimal Time William L. Holland*	A Local Search Algorithm for the Min-Sum Submodular Cover Problem Lisa Hellerstein, Thomas Lidbetter, and R. Teal Witter*
				Data Structures 2 (on-site)	Approximation 2 (online)
			11:10 - 11:35	Range Updates and Range Sum Queries on Multidimensional Points with Monoid Weights Shangqi Lu and Yufei Tao*	Multi-Robot Motion Planning for Unit Discs with Revolving Areas Pankaj K. Agarwal, Tzvika Geft, Dan Halperin, and Erin Taylor*
				Data Structures 3 (on-site)	Approximation 3 (online)
			11:35 - 12:00	External-memory dictionaries with worst-case update cost Rathish Das, John Iacono*, and Yakov Nekrich	Nested Active-Time Scheduling Nairen Cao*, Jeremy T. Fineman, Shi Li, Julián Mestre, Katina Russell, and Seun William Umboh
				Data Structures 4 (online)	Approximation 4 (online)
			12:00 - 13:30	Lower Bounds on Retroactive Data Structures Lily Chung*, Erik D. Demaine, Dylan Hendrickson, and Jayson Lynch	Approximating the Minimum Logarithmic Arrangement Problem Julián Mestre* and Sergey Pupyrev
				Lunch: Bulgoggi (beef)	
4:30	23:30	20:30	13:30 - 13:55	Session 2A (Chair: Yufei Tao)	Session 2B (Chair: Chung-Shou Liao)
	12/18	12/18		Graph 1 (on-site)	Approximation 5 (on-site)
			13:55 - 14:20	Extended MSO Model Checking via Small Vertex Integrity Tatsuya Gima* and Yota Otachi	Package Delivery Using Drones with Restricted Movement Areas Thomas Erlebach, Kelin Luo*, and Frits C.R. Spieksma
				Graph 2 (on-site)	Approximation 6 (on-site)
			14:20 - 14:45	Improved Compression of the Okamura-Seymour Metric Shay Mozes, Nathan Wallheimer*, and Oren Weimann	Algorithms for Landmark Hub Labeling Sabine Storandt*
				Graph 3 (on-site)	Approximation 7 (online)
			14:45 - 15:10	Space-Efficient Graph Coarsening with Applications to Succinct Planar Encodings Frank Kammer and Johannes Meintrup*	Parameterized Approximation Algorithms for TSP Jianqi Zhou*, Peihua Li, and Jiong Guo
				Graph 4 (online)	Approximation 8 (online)
			15:10 - 15:40	On the Complexity of Tree Edit Distance with Variables Tatsuya Akutsu*, Tomoya Mori, Naotoshi Nakamura, Satoshi Kozawa, Yuhei Ueno, and Thomas N. Sato	Hardness of Approximation for H-free Edge Modification Problems: Towards a Dichotomy Tatiana Belova* and Ivan Bliznets
				Coffee/Tea Break	
6:40	1:40	22:40	15:40 - 16:05	Session 3A (Chair: Ryuhei Uehara)	Session 3B (Chair: Hirota Ono)
		12/18		Online 1 (on-site)	Approximation 9 (on-site)
			16:05 - 16:30	Minimizing the Maximum Flow Time in the Online Food Delivery Problem Xiangyu Guo, Kelin Luo*, Shi Li, and Yuhao Zhang	Bi-criteria Approximation Algorithms for Bounded-Degree Subset TSP Zachary Friggstad and Ramin Mousavi*
				Online 2 (on-site)	Approximation 10 (on-site)
			16:30 - 16:55	Improving the Bounds of the Online Dynamic Power Management Problem Ya-Chun Liang*, Kazuo Iwama, and Chung-Shou Liao	Budgeted Out-tree Maximization with Submodular Prizes Gianlorenzo D'Angelo, Esmail Delfaraz*, and Hugo Gilbert
				Online 3 (online)	Approximation 11 (on-site)
			16:55 - 17:20	Polynomial Threshold Functions for Decision Lists Vladimir Podolskii and Nikolay V. Proskurin*	Complexity and algorithms for Isometric Path Cover on chordal graphs and beyond Dibyayan Chakraborty, Antoine Dailly, Sandip Das, Florent Foucaud, Harmender Gahlawat*, and Subir Kumar Ghosh
				Online 4 (online)	
			16:55 - 17:20	Distortion-Oblivious Algorithms for Scheduling on Multiple Machines Yossi Azar, Eldad Peretz*, and Noam Touitou	

\*. speaker

**12/20  
TUESDAY**

GMT	EST	PST	December 20 (KST)	Room 612	Room 608	
			<b>8:30 - 9:00</b>	<b>Registration</b>		
0:00	19:00	16:00	<b>9:00 - 10:00</b>	<b>Invited Talk 2 (online) at Room 612 (Chair: Sang Won Bae)</b>		
	12/19	12/19		<i>The Tragedy of Being Almost but Not Quite Planar</i>		
		Jeff Erickson* (University of Illinois at Urbana-Champaign)				
			<b>10:00 - 10:20</b>	<b>Coffee/Tea Break</b>		
1:20	20:20	17:20	<b>10:20 - 10:45</b>  <b>10:45 - 11:10</b>  <b>11:10 - 11:35</b>  <b>11:35 - 12:00</b>	<b>Session 4A (Chair: Hee-Kap Ahn)</b>	<b>Session 4B (Chair: Sungjin Im)</b>	
	12/19	12/19		<b>Geometry 1 (online)</b>	<b>Graph 5 (online)</b>	
		<i>Computation of cycle bases in surface embedded graphs</i>		<i>Shortest Beer Path Queries in Interval Graphs</i>		
		Kyle Fox and Thomas Stanley*		Rathish Das, Meng He, Eitan Kondratovsky, J. Ian Munro, Anurag Murty Naredla, and Kaiyu Wu*		
		<b>Geometry 2 (online)</b>		<b>Graph 6 (online)</b>		
		<i>Clustering with Faulty Centers</i>		<i>Pursuit-Evasion in Graphs: Zombies, Lazy Zombies and a Survivor</i>		
		Kyle Fox, Hongyao Huang*, and Benjamin Raichel		Prosenjit Bose, Jean-Lou De Carufel*, and Thomas Shermer		
		<b>Geometry 3 (online)</b>		<b>Graph 7 (on-site)</b>		
		<i>Evacuation from a Disk for Robots with Asymmetric Communication</i>		<i>On constrained intersection representations of graphs and digraphs</i>		
		Konstantinos Georgiou*, Nikos Giachoudis, and Evangelos Kranakis		Ferdinando Cicalese*, Clément Dallard, and Martin Milanič		
		<b>Geometry 4 (online)</b>		<b>Graph 8 (online)</b>		
		<i>The Dispersive Art Gallery Problem</i>		<i>Popular Edges with Critical Nodes</i>		
		Christian Rieck* and Christian Scheffer		Kushagra Chatterjee* and Prajakta Nimbhorkar		
			<b>12:00 - 13:30</b>	<b>Lunch: Bossam (pork)</b>		
4:30	23:30	20:30	<b>13:30 - 13:55</b>  <b>13:55 - 14:20</b>  <b>14:20 - 14:45</b>  <b>14:45 - 15:10</b>	<b>Session 5A (Chair: John Iacono)</b>	<b>Session 5B (Chair: Yo-Sub Han)</b>	
	12/19	12/19		<b>Geometry 5 (online)</b>	<b>Combinatorics 1 (online)</b>	
		<i>Efficiently Reconfiguring a Connected Swarm of Labeled Robots</i>		<i>On finding short reconfiguration sequences between independent sets</i>		
		Sándor P. Fekete, Peter Kramer*, Christian Rieck, Christian Scheffer, and Arne Schmidt		Akanksha Agrawal, Soumitra Hait*, and Amer E. Mouawad		
		<b>Geometry 6 (on-site)</b>		<b>Combinatorics 2 (online)</b>		
		<i>Segment Visibility Counting Queries in Polygons</i>		<i>Subquadratic Weighted Matroid Intersection under Rank Oracles</i>		
		Kevin Buchin, Bram Custers, Ivor van der Hoog, Maarten Löffler, Aleksandr Popov*, Marcel Roeloffzen, and Frank Staals		Ta-Wei Tu*		
		<b>Geometry 7 (on-site)</b>		<b>Combinatorics 3 (on-site)</b>		
		<i>Minimum Link Fencing</i>		<i>Combinatorial and Algorithmic Aspects of Monadic Stability</i>		
		Sujoy Bhore, Fabian Klute, Maarten Löffler, Martin Nöllenburg, Soeren Terziadis*, and Anais Villedieu		Jan Dreier, Nikolas Mählmann*, Amer E. Mouawad, Sebastian Siebertz, and Alexandre Vigny		
		<b>Geometry 8 (on-site)</b>		<b>Combinatorics 4 (on-site)</b>		
		<i>Hierarchical Categories in Colored Searching</i>		<i>Pop &amp; push: Ordered tree iteration in <math>O(1)</math>-time</i>		
		Peyman Afshani, Rasmus Killmann*, and Kasper Green Larsen		Paul Lapey* and Aaron Williams		
			<b>15:10 - 15:40</b>	<b>Coffee/Tea Break</b>		
6:40	1:40	22:40	<b>15:40 - 16:05</b>  <b>16:05 - 16:30</b>  <b>16:30 - 16:55</b>  <b>16:55 - 17:20</b>	<b>Session 6A (Chair: Siu-Wing Cheng)</b>	<b>Session 6B (Chair: Chih-Hung Liu)</b>	
	12/19	12/19		<b>Graph 9 (on-site)</b>	<b>String 1 (online)</b>	
		<i>Finding Matching Cuts in H-Free Graphs</i>		<i>Simple Order-isomorphic Matching Index with Expected Compact Space</i>		
		Felicia Lucke*, Daniël Paulusma, and Bernard Ries		Sung-Hwan Kim* and Hwan-Gue Cho		
		<b>Graph 10 (on-site)</b>		<b>String 2 (on-site)</b>		
		<i>One-Face Shortest Disjoint Paths with a Deviation Terminal</i>		<i>Subsequences With Gap Constraints: Complexity Bounds for Matching and Analysis Problems</i>		
		Yusuke Kobayashi and Tatsuya Terao*		Joel D. Day, Maria Kosche*, Florin Manea, and Markus L. Schmid		
		<b>Graph 11 (online)</b>		<b>String 3 (on-site)</b>		
		<i>On the complexity of rainbow vertex colouring diametral path graphs</i>		<i>Computing palindromes on a trie in linear time</i>		
		Jakob Dyrseth and Paloma T. Lima*		Takuya Mieno*, Mitsuru Funakoshi, and Shunsuke Inenaga		
		<b>Graph 12 (online)</b>		<b>String 4 (on-site)</b>		
		<i>List Locally Surjective Homomorphisms in Hereditary Graph Classes</i>		<i>Simon's Congruence Pattern Matching</i>		
		Pavel Dvořák, Tomáš Masařík, Jana Novotná*, Monika Krawczyk, Paweł Rzażewski, and Aneta Žuk		Sungmin Kim*, Sang-Ki Ko, and Yo-Sub Han		
			<b>18:00 - 21:00</b>	<b>Banquet: Buffet</b>		

\*. speaker

**12/21  
WEDNESDAY**

GMT	EST	PST	December 21 (KST)	Room 612	Room 608	
			<b>9:30 - 10:00</b>	<b>Registration</b>		
1:00	20:00	17:00	<b>10:00 - 10:30</b>	<b>Best Paper Presentation (online) at Room 612 (Chair: Takeshi Tokuyama)</b>		
	12/20	12/20		<i>On Maximizing Sums of Non-monotone Submodular and Linear Functions</i> Benjamin Qi*		
			<b>10:30 - 10:50</b>	<b>Coffee/Tea Break</b>		
1:50	20:50	17:50	<b>10:50 - 11:15</b>	<b>Session 7A (Chair: Takeshi Tokuyama)</b>	<b>Session 7B (Chair: Hyung-Chan An)</b>	
	12/20	12/20		<b>Quantum 1 (online)</b>	<b>Complexity 1 (on-site)</b>	
				<i>How to Base Security on the Perfect/Statistical Binding Property of Quantum Bit Commitment?</i>		
				Junbin Fang, Dominique Unruh, Jun Yan*, and Dehua Zhou		
				<b>Quantum 2 (online)</b>		
				<i>An optimal oracle separation of classical and quantum hybrid schemes</i>		
				Atsuya Hasegawa* and François Le Gall		
				<b>Complexity 2 (on-site)</b>		
			<i>Super-cubic lower bound for generalized Karchmer–Wigderson games</i>			
			Artur Ignatiev, Ivan Mihajlin, and Alexander Smal*			
			<b>11:15 - 11:40</b>	<b>Quantum 3 (on-site)</b>		
				<i>Optimizing Quantum Circuit Parameters via SDP</i>		
			Eunou Lee*			
			<b>11:40 - 12:05</b>	<b>Complexity 3 (online)</b>		
				<i>Integer Complexity and Mixed Binary-Ternary Representation</i>		
			Kazuyuki Amano*			
			<b>12:05 - 13:30</b>	<b>Lunch: Bulgogi (beef)</b>		
4:30	23:30	20:30	<b>13:30 - 14:45</b>	<b>Session 8A (Chair: Seok-Hee Hong)</b>		
	12/20	12/20		<b>Graph 13 (on-site)</b>		
				<i>Partial and Simultaneous Transitive Orientations via Modular Decompositions</i>		
				Miriam Münch*, Ignaz Rutter, and Peter Stumpf		
				<b>Graph 14 (on-site)</b>		
				<i>On the Cop Number of String Graphs</i>		
			<b>13:55 - 14:20</b>	Sandip Das and Harmender Gahlawat*		
				<b>Graph 15 (on-site)</b>		
			<b>14:20 - 14:45</b>	<i>Algorithms for coloring reconfiguration under recolorability digraphs</i>		
				Soichiro Fujii, Yuni Iwamasa*, Kei Kimura, and Akira Suzuki		
			<b>14:45 - 15:15</b>	<b>Coffee/Tea Break</b>		
6:15	1:15	22:15	<b>15:15 - 15:40</b>	<b>Session 9A (Chair: Kazuhisa Makino)</b>		
	12/20			<b>Graph 16 (on-site)</b>		
				<i>Locally checkable problems parameterized by clique-width</i>		
				Narmina Baghirova, Carolina Lucía Gonzalez*, Bernard Ries, and David Schindl		
				<b>Graph 17 (online)</b>		
				<i>On graphs coverable by k shortest paths</i>		
				Maël Dumas*, Florent Foucaud, Anthony Perez, and Ioan Todinca		
				<b>15:40 - 16:05</b>	<b>Algorithm 1 (on-site)</b>	
					<i>On Algorithmic Self-Assembly of Squares by Co-transcriptional Folding</i>	
				Szilárd Zsolt Fazekas, Hwee Kim, Ryuichi Matsuoka*, Shinnosuke Seki, and Hinano Takeuchi		
				<b>16:05 - 16:30</b>	<b>Geometry 9 (online)</b>	
					<i>On Reverse Shortest Paths in Geometric Proximity Graphs</i>	
			Michał Dębcki, Zbigniew Lonc, Karolina Okrasa, Marta Pieczyk*, and Paweł Rzażewski			
			<b>16:30 - 16:55</b>	<b>Algorithm 2 (online)</b>		
				<i>Entropy Matters: Understanding Performance of Sparse Random Embeddings</i>		
			Michael A. Bekos, Giordano Da Lozzo*, Petr Hliněný, and Michael Kaufmann			
			Maciej Skorski*			

\*. speaker