

**Travel Report on**  
**The 1st ACM SIGOPS Summer School on Advanced Topics in**  
**Systems**  
**(SATIS 2018)**

August 2018

This report reflects on the inaugural summer school on advanced topic in systems that took place in Tromsø, Norway, during 14<sup>th</sup> to 17<sup>th</sup> August 2018. This event marked the 30<sup>th</sup> anniversary of the renowned Arctic 88 Advanced Course on Distributed Systems, with talks from distinguished speakers.

I thank COINS for the travel support, that gave me this opportunity to experience and learn from the distinguished speakers and network with remarkable participants.

It was a 4 day event and was held on picturesque island of Sommarøy. It was more of networking with participants on day 1.

**Day 2:** The speaker of the first session was by Dag Johansen (Professor, University of Tromsø). Dag gave a brief introduction to distributed systems in elite soccer domain. And focused on distributed system they have developed, which is used in aiding and complementing sport-specific human competence, knowledge, and intuition.

Next two sessions were by Leslie Lamport (Microsoft), on “If You’re Not Writing a Program, Don’t Use a Programming Language” and “Lamport’s Turing Award talk”. He talked about some of his seminal work in distributed systems, and gave a very concise and precise description of the they key ingredients or fundamentals of distributing computing. Then he briefly talked use of formal methods (specifically) TLA+ at Amazon Web Services. Then he talked about imposing clear, well defined coherence on the seemingly chaotic behavior of distributed computing systems in which several autonomous computers are communicating by message passing.

Then, post lunch, next two session were by Lorenzo Alvisi (Professor, Cornell University). Lorenzo gave an interesting talk on fault-tolerant distributed systems, and on the in designing distributed data stores by balancing (conflicting goals of) performance and strong consistency. It was good to learn some more

interesting concepts of : linearizability, eventual consistency, casual consistency, and ACID/BASE dualism.

Then there was an arrangement for a social event: hiking to Hillesøytopen. That gave us some more time and opportunity to network. It was an amazing day, with such wonderful lectures and a great hike.

**Day 3:** Next two sessions were taken by Robbert van Renesse (Research Professor, Cornell University), where he talked about how chain replication and primary-backup protocols can support self-configuration and recover from total failures. Next two sessions were from Christian Cachin (IBM Research- Zurich). He described how Hyperledger Fabric, a modular and extensible blockchain platform, can be used to build accommodate flexible trust models, to cope with non-determinism, and to prevent resource exhaustion. Then he mentioned several proof-of-concepts and productions systems of distributed ledger technology that use Fabric as a platform for distributing trust over the Internet. And at last, two sessions were by Michael Franklin (Professor, University of Chicago). He discussed architectures and approaches for distributed analytics including parallel and distributed query processing, map-reduce architectures such as Spark, and streaming and continuous analytics systems. And then there was a poster session, that again gave us some opportunity to exchange some more ideas.

**Day 4:** Fred Schneider (Professor, Cornell University), took the next two sessions. His lectures discussed security from tags by using reactive information flow. He described the design of this RIF labels and a static enforcement scheme for the same.

Overall the sessions and interactions was beneficial for my research work, especially lectures from Leslie Lamport and Fred Schneider. All others also gave certain perspective.

I again thank COINS for the travel support, that helped me to attend this event and learn from such talented speakers.

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