Logic in Industry

Joey Dodds, Galois

Do you want your work to apply now?

Are industry and academia compatible?

New-School applications of logic to software are:
(choose as many as you can)

- Fast
- Push-button
- Don't rely on source
- Automated
- Continuous
- Gradual

Fast is good

"...we recount a striking situation where the diff time deployment saw a 70% fix rate, where a more traditional "offline" or "batch" deployment (where bug lists are presented to engineers, outside their workflow) saw a 0% fix rate."

From "Scaling Static Analysis at Facebook"

Push Button

Unfortunately, this one is about build systems

and unsoundness

Don't rely on source code

Automation

Continuous

Current   Branches   Build History   Pull Requests   More options ☰

✓ **Pull Request #809**   add two elb TLSPolicies 2018-06   ⇅ **#1928 passed**

   ⟋ Commit 05a638f ↗   ⏱ Ran for 44 min 50 sec

   ⇅ #809: add two elb TLSPolicies 2018-06 ↗   🕐 Total time 4 hrs 58 min 13 sec
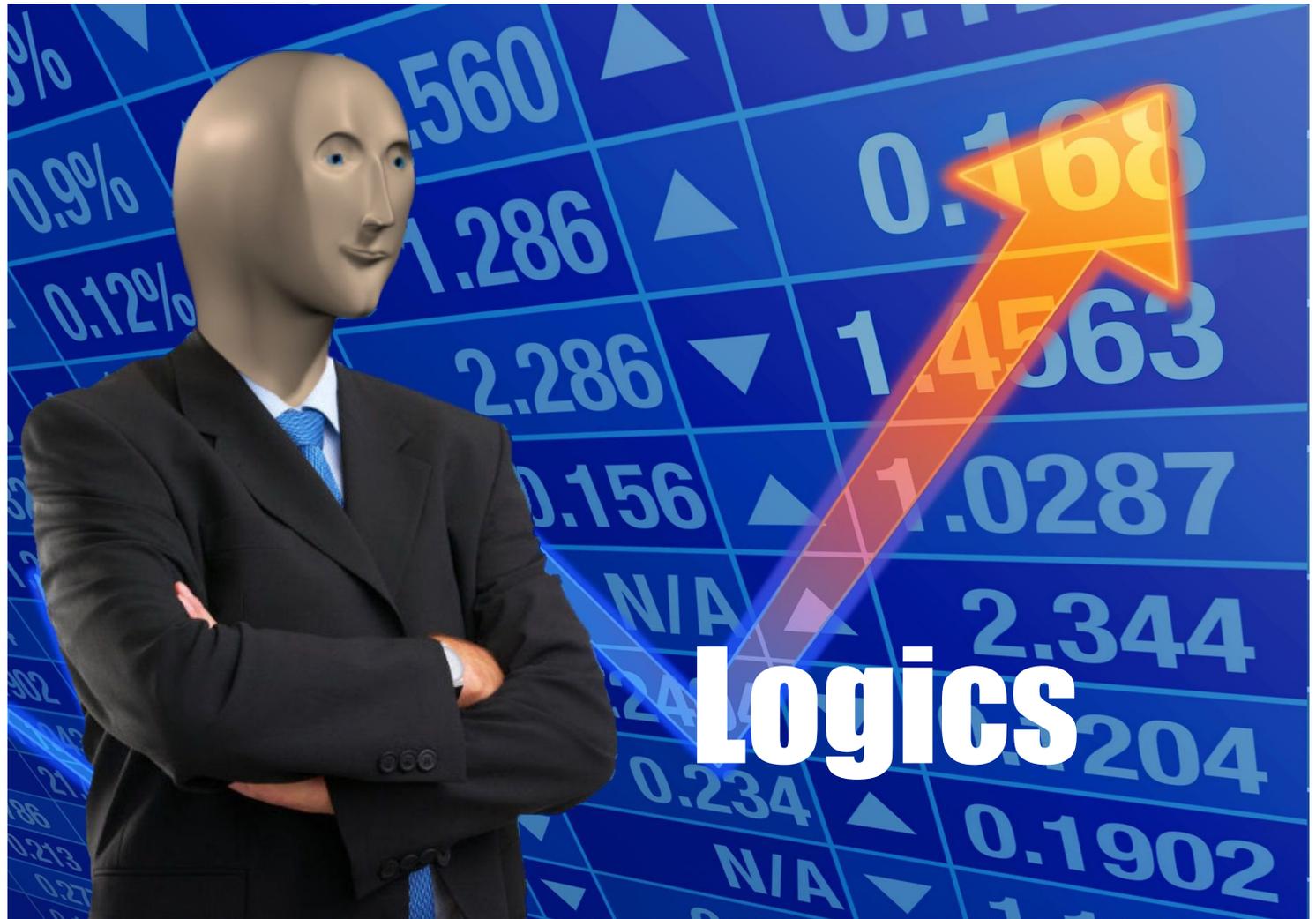
   ⌥ Branch master ↗

   ⏻ Kailun Qian authored and committed   🗓 about an hour ago

Build Jobs

✓	# 1928.1	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.1.0 BUILD_S…	🕐 9 min 23 sec
✓	# 1928.2	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.0.2 BUILD_S…	🕐 10 min 10 sec
✓	# 1928.3	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.0.2-fips BUIL…	🕐 9 min 49 sec
✓	# 1928.4	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=libressl BUILD_S2N=tr…	🕐 11 min 29 sec
✓	# 1928.5	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.1.0 OPENSS…	🕐 10 min 39 sec
✓	# 1928.6	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.1.0 LATEST_…	🕐 20 min 8 sec
✓	# 1928.7	🐱	</> Xcode: xcode8 C	📦 S2N_LIBCRYPTO=openssl-1.0.2-fips LAT…	🕐 18 min 18 sec
✓	# 1928.8	🐱	</> Xcode: xcode8 C	📦 TESTS=sidewinder	🕐 12 min 47 sec
✓	# 1928.9	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=md…	🕐 9 min 27 sec
✓	# 1928.10	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=sha…	🕐 9 min 25 sec
✓	# 1928.11	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=sha…	🕐 8 min 43 sec
✓	# 1928.12	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=sha…	🕐 11 min 5 sec
✓	# 1928.13	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=sha…	🕐 12 min 46 sec
✓	# 1928.14	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMAC SAW_HMAC_TEST=sha…	🕐 12 min 12 sec
✓	# 1928.15	🐱	</> Xcode: xcode8 C	📦 TESTS=tls SAW=true GCC6_REQUIRED=f…	🕐 14 min 6 sec
✓	# 1928.16	🐱	</> Xcode: xcode8 C	📦 TESTS=sawHMACFailure SAW=true	🕐 9 min 43 sec

Gradual

Logics

Thank you!