






Internet of Bats

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- Student, 25 Jahre alt
- Dinge mit Soft- und Hardware
 - „dehydrated“ (Let's Encrypt Client)
 - Internet of Bats
 - Viele kleinere Bastelprojekte
- Manchmal finde ich versehentlich Sicherheitslücken:
 - u.a. bei Apple, Ubiquiti, Uberspace, auf Plasteroutern, usw.



- Python
- Arduino
- Dingfabrik

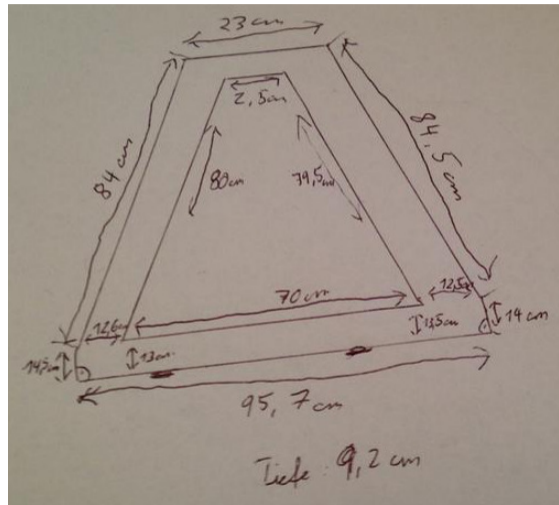
- Lichtschranken
- Ultraschall-Rekorder
- SDR-Triangulation
- und weiteres...

Warum?

- Alternativlos
- Kosten
- Daten

Lichtschranken

- Dachboden auf Fachwerkhaus
- Dreieckiges Fenster als Einflug



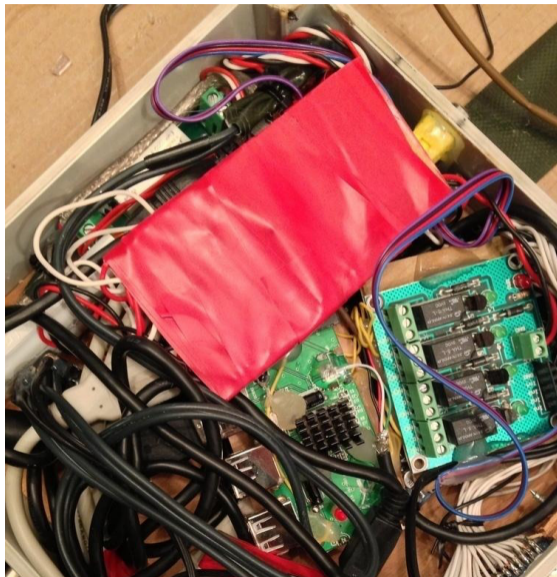
Aufbau



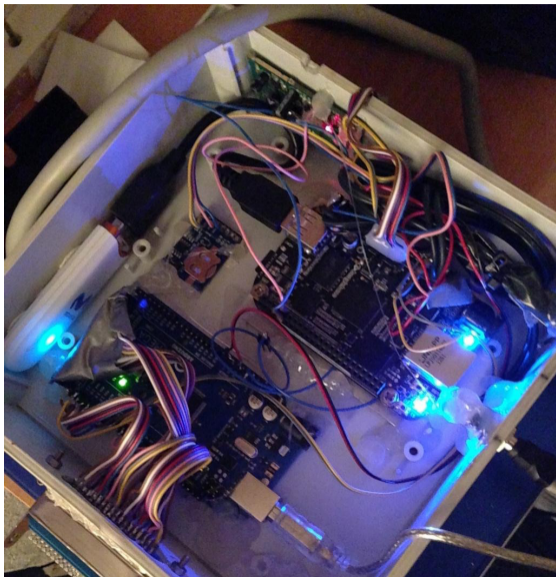
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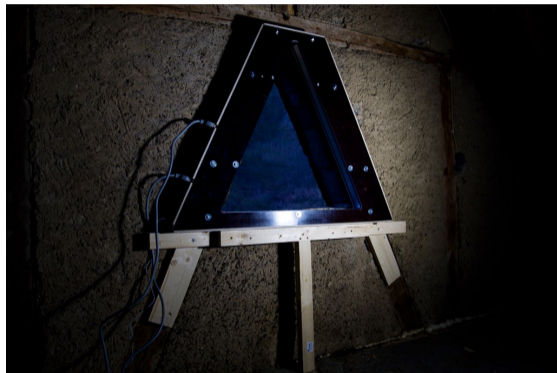
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Internet of Bats

- Logging: Python Scripts zum Lesen der Lichtschranken- und Wetter-Daten
- Datenübertragung: UMTSKeeper, Sakis3g, OpenVPN, OpenSSH, rsync
- SMS: Python Logging-Script für Provider-SMS u.ä., „wakeupcall“-SMS
- Sonstiges: Python basiertes Webinterface zur Logansicht, Debug-LED-Blink-Scripts
- Zu finden unter <https://github.com/lukas2511/FlederSchranke>

Einbau der ersten Lichtschanke



Erfolg?

Flippy Bits: A04, A07, A12, A14, A16, B17

A -> B: 33

B -> A: 34

?????: 6

Sonnenuntergang: 2014-03-15 17:33:46

Sonnenaufgang: 2014-03-16 05:46:47

[Rohdaten herunterladen](#)

			Innen (A)	Außen (B)
2014-03-15	19:17:02,609	- T	1394907421920400	000000010100000000000000 000000000000000000000000
2014-03-15	19:17:02,617	- T	1394907421920484	000000110101110000000000 000000000000000000000000
2014-03-15	19:17:02,623	- T	1394907421920564	000000110111110000000000 000000000000000000000000
2014-03-15	19:17:02,630	- T	1394907421921408	000000110111111100000000 000000000000000000000000
2014-03-15	19:17:02,643	- T	1394907421922672	000000111111111100000000 000000000000000000000000
2014-03-15	19:17:02,656	- T	1394907421931724	000000111111111100000000 000000000001000000000000
2014-03-15	19:17:02,663	- T	1394907421931808	000000111111111100000000 000000000001100000000000
2014-03-15	19:17:02,670	- T	1394907421932144	000000111111111100000000 000000000101100000000000
2014-03-15	19:17:02,674	- T	1394907421932616	000000111111111100000000 000000000101110000000000
2014-03-15	19:17:02,678	- T	1394907421933780	000000111111111100000000 000000000110111000000000
2014-03-15	19:17:02,685	- T	1394907421934352	000000111111111100000000 000000011101110000000000
2014-03-15	19:17:02,689	- T	1394907421934492	000000111111111100000000 000000011101111100000000
2014-03-15	19:17:02,693	- T	1394907421935136	000000111111111100000000 000000011111111100000000
2014-03-15	19:17:02,697	- T	1394907421935748	000000001111111100000000 000000011111111100000000
2014-03-15	19:17:02,700	- T	1394907421935832	000000001111011100000000 000000011111111100000000
2014-03-15	19:17:02,704	- T	1394907421937620	000000001111011100000000 000000011111101100000000

Nein? Warum?

11110010010100110111000001011111111111101011101001
11110010010100100111000001011111111111101011101001
11110010010100110111000001011111111111101011101001
11110010010100100111000001011111111111101011101001
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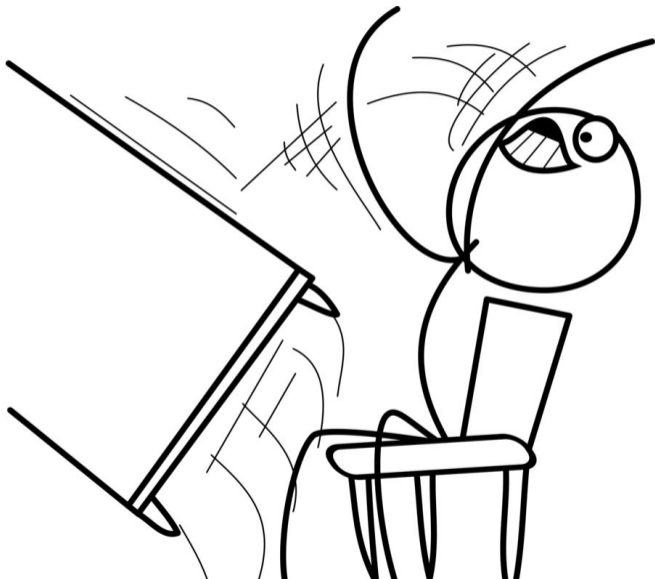


Zweite Lichtschanke

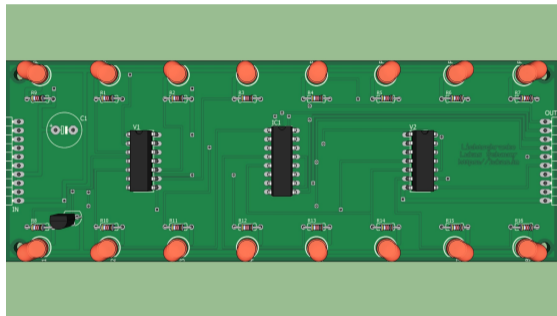
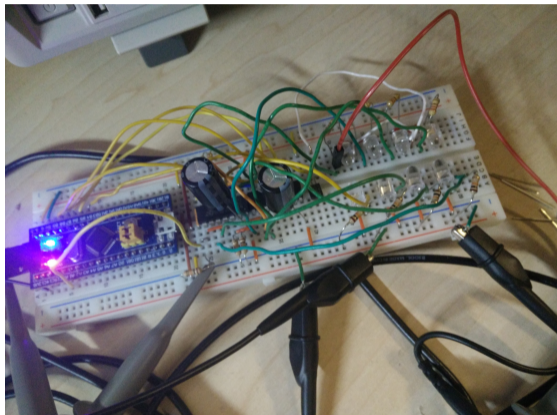
- In einer Höhle
- Keine Internetverbindung -> Kein Remote-Debugging
- Leider wegen Software-Fehler keine Daten erhalten...



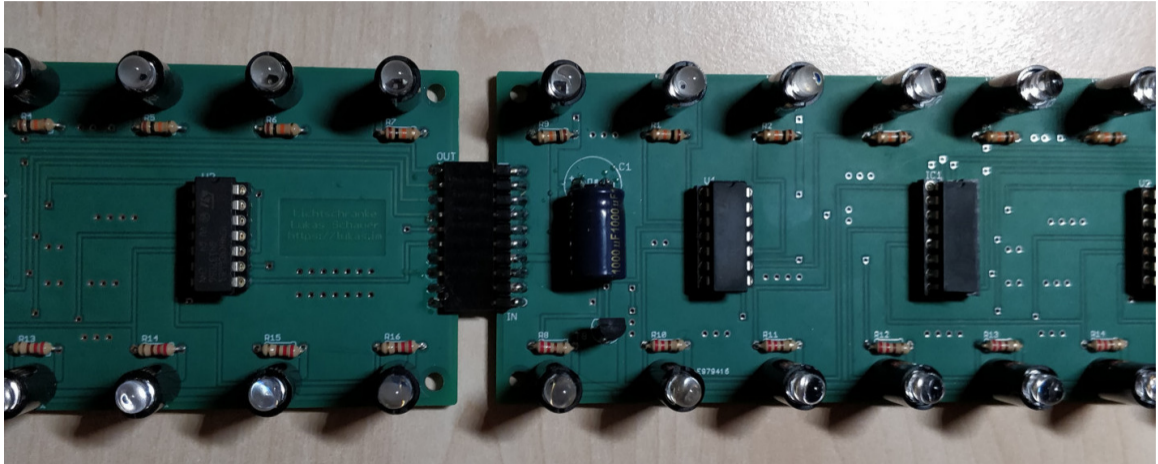
OK.



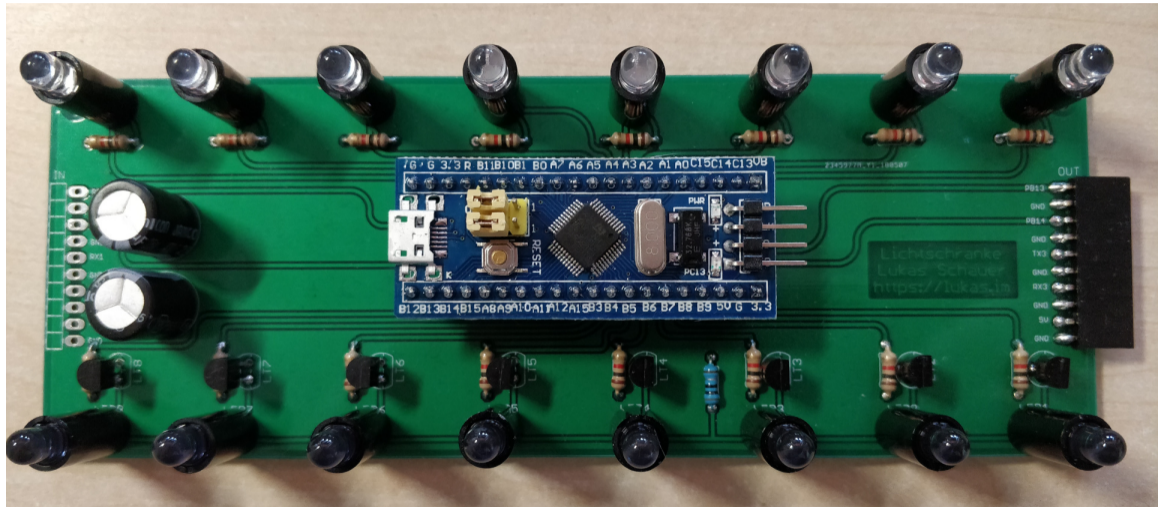
Entwurf mit Shift-Registern



Umsetzung und neue Probleme



Neue Version

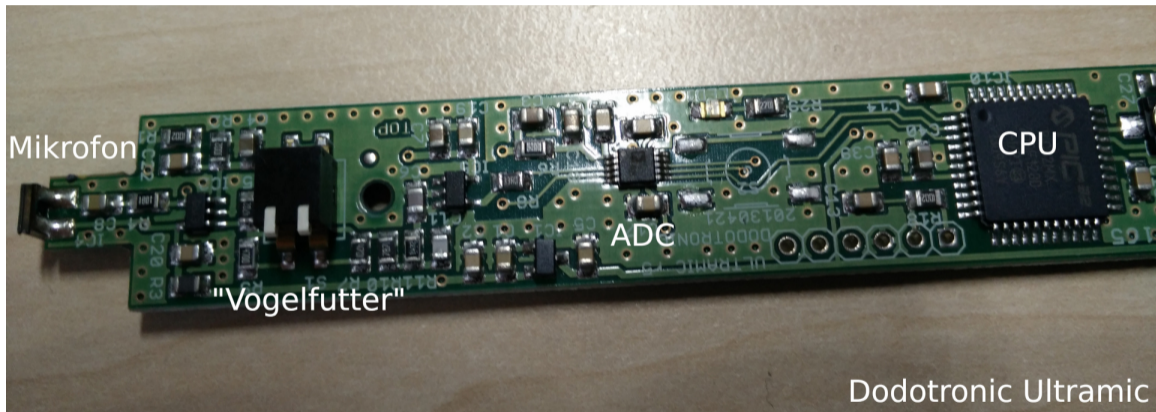


Ultraschall Rekorder

- Aufzeichnung von Fledermausrufen
- Arten-Identifizierung
- Kombination mit anderen Daten

Sonstige Projekte

DIY Mikrofone



SDR-Triangulation





Sonstiges



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