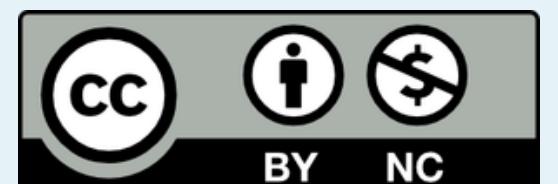


メディアアート・プログラミング2

東京藝術大学 芸術情報センター開設科目 後期金曜4限 第10週

2023.12.08 松浦知也 (matsura.tomoya@noc.geidai.ac.jp teach@matsuuratomo.ya.com)



Webスクレイピング

Get Well Soon(2020)

Sam Lavigne & Tega Brain

All my good wishes and also admiration for your positive attitude.
All my good wishes are with you and your family.
All my gratitude, forever.
All my happy thoughts to you & the pupper
All my healing energy going to you.
All my healing energy is going your way.
All my healing thoughts go out to you.
All my healing thoughts sent your way!
All my healing vibes are going your way ❤
All my heart and prayers are with you cuz.
All my heart and thought are with you guys.
All my heart to you!
All my heart to your closest friends and family!
All my heartfelt post wishes to you and your whole family!
All my hope and love goes to you.
All my hope and wishes are with you
All my hopes and prayers for you and your family!!!
All my hopes and prayers to you and your beautiful little ones.
All my hopes dear one.
All my hopes for your success!
All my hopes.
All my kids miss you!
All my love to you all!
All my love
All my love ❤
All my love & best wishes x
All my love & best wishes!
All my love & blessings
All my love & good energy!!
All my love & hugs!
All my love & keep fighting.
All my love & light for healing and strength go to his wife, son, stepson, and all those that loved him.
All my love & support.
All my love .
All my love ..
All my love :)
All my love <3
All my love @michaelreid7 x
All my love always x
All my love an positive thoughts for you all.
All my love an prayers always.
All my love and all my prayers are with you.
All my love and all my prayers go out to you.
All my love and all the best for your family.
All my love and best hopes!
All my love and best wishes beautiful lady
All my love and best wishes for a quick recovery.
All my love and best wishes for a speedy recovery.
All my love and best wishes to you guys!
All my love and best wishes xxx
All my love and best wishes, will send positive thoughts your guys way.
All my love and best wishes.
All my love and blessings to you all.
All my love and blessings!
All my love and constant prayers for your healing.
All my love and continual prayers!
All my love and empathy to you!
All my love and faith.
All my love and healing prayers my dear sister.
All my love and healing prayers.
All my love and healing thoughts your way.
All my love and healing vibes <3
All my love and heartfelt condolences.
All my love and hopes for fast recovery!
All my love and hugs
All my love and hugs xxx
All my love and hugs for you all during this difficult time!
All my love and hugs to you
All my love and hugs...
All my love and light for you all during this time xx
All my love and light
All my love and positive energy to this amazing dog.
All my love and positive energy to you!
All my love and positive thoughts to you, my friend
All my love and positivity x
All my love and positivity.

your head up!
All the best everyone.
All the best fellas, don't worry about the hair it's overrated anyway trust me!
All the best folks & fingers crossed for you
All the best folks.
All the best for continued recovery
All the best for a continued recovery.
All the best for a fantastic adventure and a great cause!!!
All the best for a fast recovery!
All the best for a full and speedy recovery with luv x
All the best for a full and speedy recovery.
All the best for a full recovery.
All the best for a full recovery...
All the best for a full recovery... stay strong and keep up the fight, you can beat this!
All the best for a great outcome!
All the best for a great turnout !
All the best for a happy recovery
All the best for a quick recovery!
All the best for a quick recovery.
All the best for a safe and happy recovery!
All the best for a speedy recovery
All the best for a speedy recovery and dancing again soonest.
All the best for a speedy recovery and long happy life.
All the best for a speedy recovery guys xx
All the best for a speedy recovery post-surgery.
All the best for a speedy recovery x
All the best for a speedy recovery xx
All the best for a speedy recovery x
All the best for a speedy recovery xx
All the best for a speedy recovery!
All the best for a speedy recovery!!
All the best for a steady recovery
All the best for a successful fund raising and rapid healing.
All the best for a successful operation and quick recovery
All the best for a successful treatment.
All the best for a wonderful life ahead x
All the best for all of you.
All the best for all that you need.
All the best for all...
All the best for an amazing journey!
All the best for beating the bugs and increasing awareness xx
All the best for finding the answers!
All the best for getting this sorted you legend.
All the best for her
All the best for her recovery!
All the best for her treatment.
All the best for her!
All the best for his surgery.
All the best for my wonderful teacher.
All the best for race day xx
All the best for shelby!
All the best for speedy recovery.
All the best for surgery and recovery.
All the best for the big jump.
All the best for the big race :)
All the best for the boys
All the best for the challenge!
All the best for the cut!
All the best for the darling girl!
All the best for the extension of his visa.
All the best for the family!
All the best for the family!
All the best for the fight.
All the best for the future
All the best for the future :)
All the best for the future and good health.
All the best for the future and hope you can raise the funds you need
All the best for the future for you and your family!
All the best for the future x
All the best for the future xx
All the best for the future!!
All the best for the future.
All the best for the lad to recover promptly and hit the pitch again!
All the best for the little man
All the best for the little one, medical science is a wonderful thing
All the best for the project!!!
All the best for the project.
All the best for the recovery ahead vewwww

Best of luck and prayers for a beautiful healthy baby!♥
Best of luck and prayers for you and your family!
Best of luck and prayers for your family.
Best of luck and prayers sent for you and your family.
Best of luck and prayers to you and yours
Best of luck and prayers to you, little man.
Best of luck and prayers to you.
Best of luck and prayers x
Best of luck and prayers your way
Best of luck and prayers your way.
Best of luck and prayers!
Best of luck and prayers.
Best of luck and proud to support this campaign!
Best of luck and remember to keep snacking as you go.
Best of luck and ride safe.
Best of luck and rock this!
Best of luck and safe travels.
Best of luck and sending love!♥
Best of luck and sending prayers!
Best of luck and sorry I was not more
Best of luck and sounds like you have a good plan and lots of support.
Best of luck and speedy recovery
Best of luck and speedy recovery.
Best of luck and stay positive!
Best of luck and stay strong x
Best of luck and stay strong!
Best of luck and stay strong.
Best of luck and such a good cause.
Best of luck and take care.
Best of luck and thanks for all you do!
Best of luck and thanks for your service sir!
Best of luck and thinking of you.
Best of luck and we can't wait to hear about it when you return!
Best of luck and we love you!
Best of luck and we will be praying for a successful outcome and quick recovery.
Best of luck and we will be praying.
Best of luck and we will keep you in our prayers!
Best of luck and we will pray for you.
Best of luck and well done
Best of luck and well done on raising so much.
Best of luck and well wishes!
Best of luck and well sending prayers your way!
Best of luck and wish you all the best and every success and happiness in your life.
Best of luck and wishes for a speedy recovery.
Best of luck and wishes that you make it out and that you final achieve your dream!
Best of luck and wishes to you and your family.
Best of luck and wishes, my friend!
Best of luck and you got this lady!!
Best of luck angle
Best of luck as surgeries and healing continues!!
Best of luck as you continue your journey ♥
Best of luck as you deal with this challenge.
Best of luck as you graduate and start your journey into college!
Best of luck as you start your next chapter in life!
Best of luck as you work toward the end result!
Best of luck ash !
Best of luck at raising this money.
Best of luck at the mayo clinic.
Best of luck at this difficult time
Best of luck babes!!
Best of luck bb
Best of luck beans love you kick cancers butt you got this get better soon
Best of luck beautiful lady ✨!
Best of luck beautiful little lady!
Best of luck beautiful young lady!
Best of luck beauty
Best of luck big fella, we're here for you.
Best of luck big guy
Best of luck both - a great cause!
Best of luck both of you!
Best of luck boys!

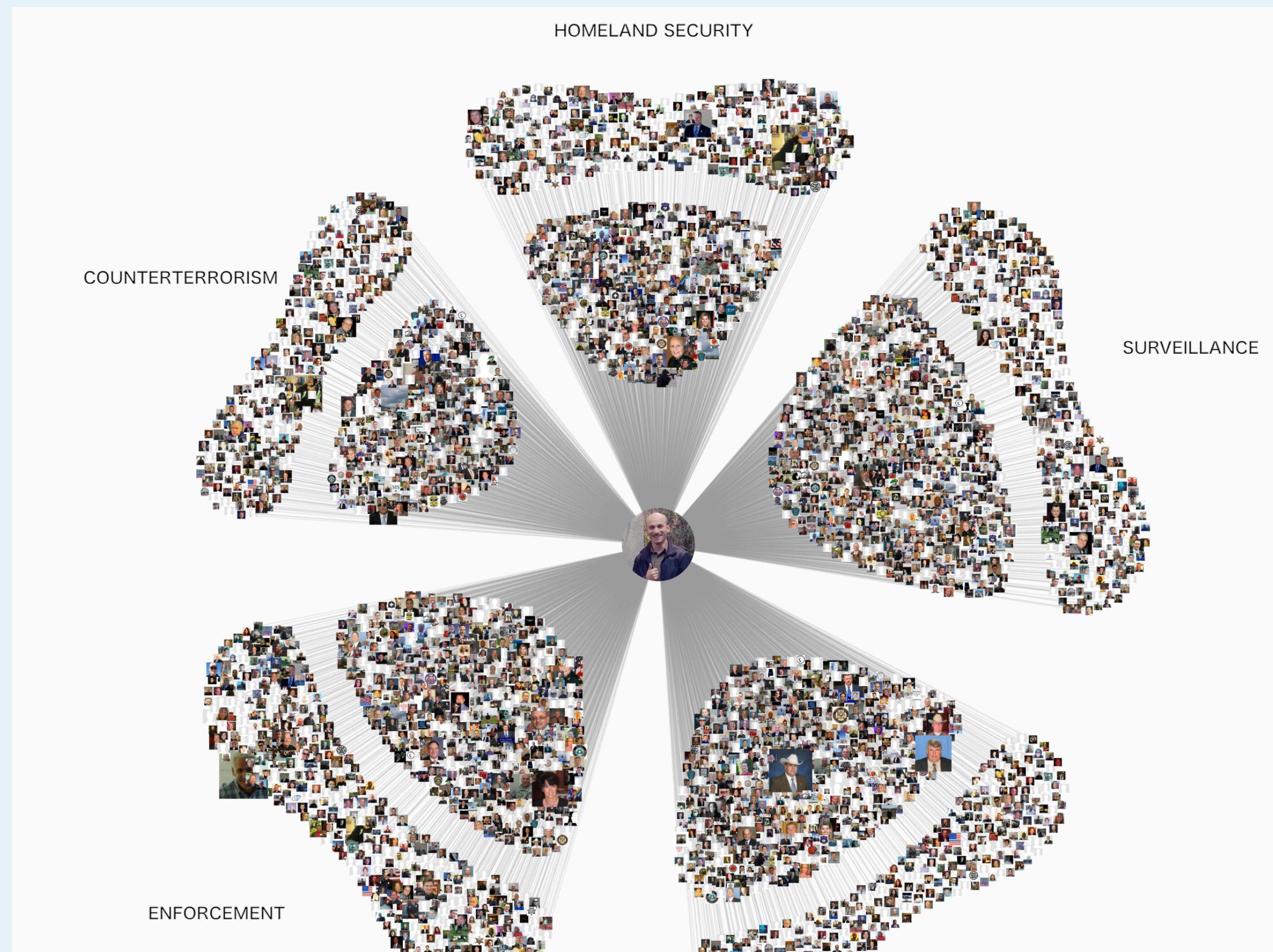
Best wishes and big hugs!
Best wishes and big love to you and your family my guy.
Best wishes and blessing throughout all this.
Best wishes and blessings for a bright, happy, and successful future!
Best wishes and blessings to the whole family...
Best wishes and blessings to you both!
Best wishes and blessings!
Best wishes and blessings... please keep me informed with updates.
Best wishes and catch up very soon!
Best wishes and comfort to him and his family.
Best wishes and condolences to you all.
Best wishes and congratulations to the proud parents
Best wishes and continual good luck to you!
Best wishes and continual fight!
Best wishes and continued success with the rehabilitation.
Best wishes and do hope the treatment is successful.
Best wishes and don't give up !!
Best wishes and enjoy every bit of it!
Best wishes and enjoy your new van!
Best wishes and et well for everyone we are pulling for you.
Best wishes and feel better home.
Best wishes and finger crossed!
Best wishes and for a speedy recovery!
Best wishes and for many blessings to you all!
Best wishes and full recovery
Best wishes and full recovery.
Best wishes and get well
Best wishes and get well soon
Best wishes and get well soon young man
Best wishes and get well soon!
Best wishes and get well soon.
Best wishes and god bless
Best wishes and god bless!!
Best wishes and god bless.
Best wishes and good luck
Best wishes and good luck !
Best wishes and good luck for achieving your target.
Best wishes and good luck in finding your cure!
Best wishes and good luck o7
Best wishes and good luck on your campaign.
Best wishes and good luck to beat this dreaded disease!
Best wishes and good luck to your upcoming surgery!!
Best wishes and good luck x
Best wishes and good luck xxx
Best wishes and good luck!
Best wishes and good luck!!
Best wishes and good luck!
Best wishes and good luck.
Best wishes and good vibes sent your way.
Best wishes and happy holidays!
Best wishes and happy memories.
Best wishes and happy to help.
Best wishes and have an amazing trip!
Best wishes and healing huzz.
Best wishes and healing prayers!
Best wishes and healing thoughts are coming your way.
Best wishes and healing to you!
Best wishes and healing!
Best wishes and health
Best wishes and heal to a speedy recovery....
Best wishes and high hopes for your upcoming treatment.
Best wishes and hope all goes well for you!
Best wishes and hope everything goes well.
Best wishes and hope it will really be comfortable
Best wishes and hope that you win this battle
Best wishes and hope the baby continues to get well.
Best wishes and hope the research gets funded.
Best wishes and hope the treatment goes well!
Best wishes and hope to a speedy recovery!
Best wishes and hope you achieve your target.
Best wishes and hope you and your family enjoy.
Best wishes and hope your in n out was super good!
Best wishes and hope you get there
Best wishes and hopes for a successful transplant!
Best wishes and hope for strength as you continue your journey!
Best wishes and hoping a speedy recovery!
Best wishes and hoping all goes well!
Best wishes and hoping for a return to good health soon!

Can't wait :)
Can't wait for all the many, m. About
Can't wait for her to finally have one!
Can't wait for her to run laps around us
Can't wait for him to get his glasses.
Can't wait for more music, mobility, an
Can't wait for more picture of this hand:
Can't wait for more pluckers trivia!
Can't wait for our get together!
Can't wait for our little boys to grow up
Can't wait for the book that is born from
Can't wait for the book!
Can't wait for the building invite !
Can't wait for the end of treatment cele
Can't wait for the happy ending!
Can't wait for the healing party!
Can't wait for the little ones to play tog
Can't wait for the next one!
Can't wait for the next update.
Can't wait for the opening.
Can't wait for the party!
Can't wait for the pictures.
Can't wait for the release!
Can't wait for the show.
Can't wait for the sparkle to be back.
Can't wait for the studio tour.
Can't wait for the teachings.
Can't wait for the blog!!
Can't wait for the updates.
Can't wait for them to be home!
Can't wait for this journey!!
Can't wait for this peanut!!
Can't wait for this to be behind you and
belong!
Can't wait for this to be behind you
Can't wait for this to happen for you!
Can't wait for this, best of luck
Can't wait for those dreads to disappear
Can't wait for updates post surgeryl
Can't wait for y'all to add a sweet bundl
Can't wait for you to be able to go on yo
Can't wait for you to be back at work!
Can't wait for you to be back x
Can't wait for you to be on the other sic
Can't wait for you to be well again.
Can't wait for you to beat this and be c
Can't wait for you to come back cancer
Can't wait for you to come back!
Can't wait for you to come home and w
miss you!
Can't wait for you to feel better!
Can't wait for you to feel better.
Can't wait for you to finally have your b
Can't wait for you to get better and corr
Can't wait for you to get started on this
Can't wait for you to get these!!!
Can't wait for you to get well enough fo
Can't wait for you to get your dog.
Can't wait for you to get your dream do
Can't wait for you to get your glasses
Can't wait for you to get your new ride!
Can't wait for you to go home and be w
Can't wait for you to have the glasses y
Can't wait for you to have your buddy!!
Can't wait for you to have your helper!
Can't wait for you to heal!
Can't wait for you to meet the rest of y
Can't wait for you to meet your new pa
Can't wait for you to see it.
Can't wait for you to see my beautiful f
Can't wait for you to see those specia
Can't wait for you to strap on your guite
drums and jam!
Can't wait for you to walk in our office.
Can't wait for your harassment.
Can't wait for your healing so you can t
gift!
Can't wait for your mums to post some!

- 治療費支援がメインのクラウドファンディング
Webサイトから応援のメッセージを収集
- 相互扶助が前提の米医療システムへの皮肉に

3 DEGREES OF SEPARATION FROM THE MILITARY-INDUSTRIAL-PRISON-DATA-SURVEILLANCE STATE(2015)

Sam Lavigne



- 自身のLinkedInの「知り合いの知り合い」の中にどれだけ「監視テクノロジー」等に長けた人がいるかを可視化

<https://linkedd.s3.amazonaws.com/index.html>



<https://wikitter.info/>

The screenshot shows the homepage of Pedia Route.com. The title "Pedia Route.com" is displayed in a green and black font. Below the title, a subtitle says "Find a route between any page in Wikipedia within 6 links". There are two input fields: the first is associated with a "to" button and the second with a "from" button. Below these fields is a "Search" button. Underneath the search area, there is a link "日本語を選択" (Select Japanese). At the bottom, there are links for "Home" and "About".

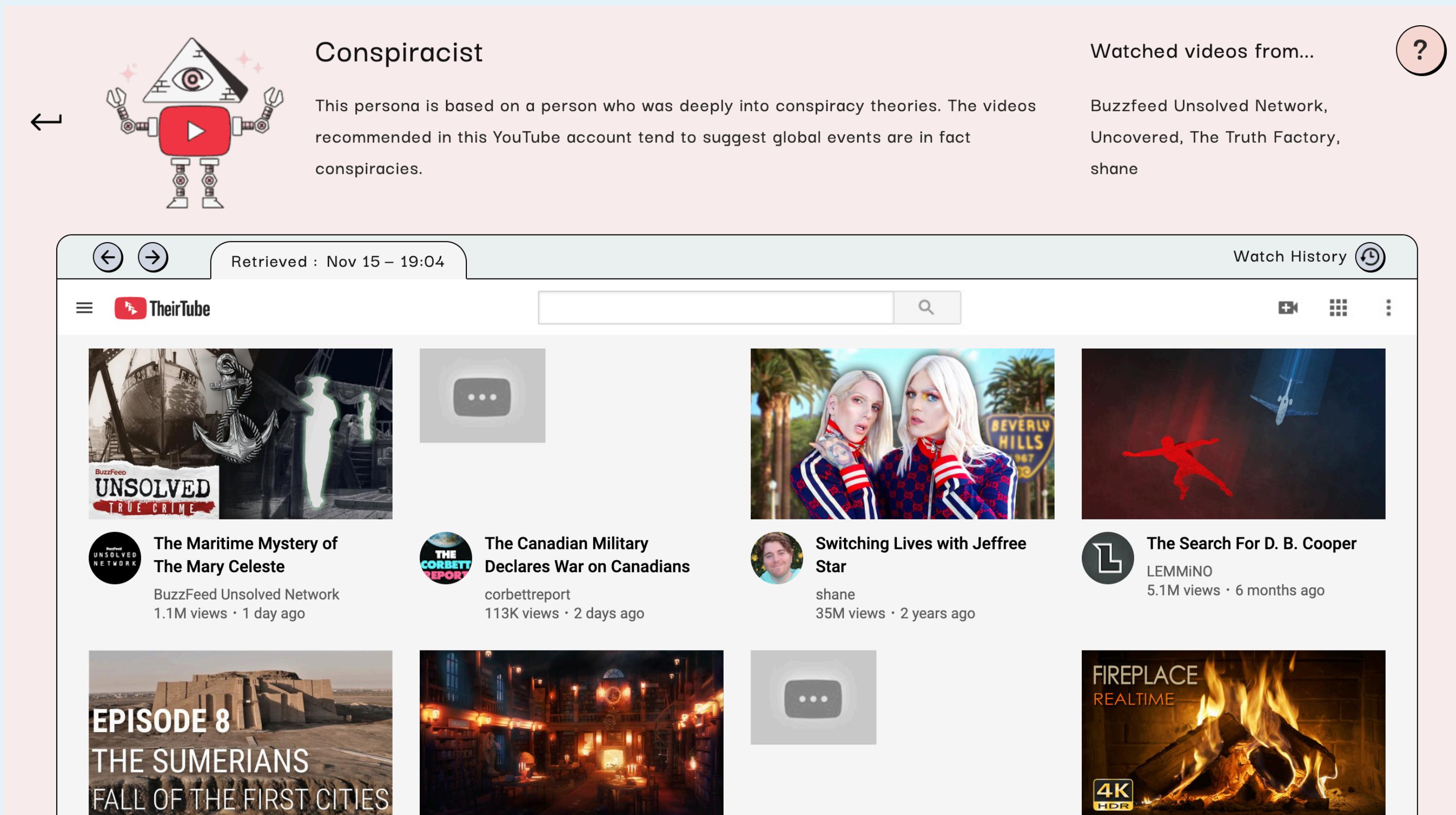
<https://pediaroute.com/>

The screenshot shows the homepage of Six Degrees of Wikipedia. The title "WIKIPEDIA" is prominently displayed with "SIX DEGREES OF" written above it in smaller letters. To the right of the title are links for "About", "Blog", and "GitHub". Below the title, a subtitle says "Find the shortest paths from". There are two input fields: the first contains "Sex in space" and the second contains "Donald Trump", with a "to" button between them. Below these fields is a red "Go!" button. A network graph visualization shows a path from "Sex in space" to "Donald Trump" through several intermediate nodes.

<https://www.sixdegreesofwikipedia.com/>

TheirTube(2020)

木原共



- Youtubeで特定のワードを検索するペルソナを複数作り、その人にレコメンドされる動画を可視化する
- スクレイピングには今日使うpuppeteerを使用&ソースも公開されている

 **TheirTube** Public

Watch 6 Fork 14 Starred 131

master 8 Branches 0 Tags Go to file Add file Code

kihapper Merge pull request #5 from guysimard/patch-1 · 4cb6951 · 3 years ago · 13 Commits

.vscode	Initial Commit	3 years ago
cookies/curator1_cookie	Remove, ignore .DS_Store files	3 years ago
images	Initial Commit	3 years ago
src	Remove, ignore .DS_Store files	3 years ago
.gitignore	Remove, ignore .DS_Store files	3 years ago
README.md	Fixed typo in read me.md	3 years ago
package-lock.json	fixed dependency issues	3 years ago
package.json	Initial Commit	3 years ago

README

TheirTube Scraper

Theirtube is a YouTube filter bubble simulator that provides a look into how videos are recommended on other people's YouTube. their.tube.

TheirTube scraper allows to retrieve your own YouTube recommendation results on your local environment

About

TheirTube scraper allows you to retrieve your own YouTube recommendation results on your local environment

www.their.tube

nodejs youtube puppeteer

Readme Activity 131 stars 6 watching 14 forks

Report repository

Releases

No releases published

Packages

No packages published

Contributors 3

 **kihapper** kihapper
 **openick** John Karahalis

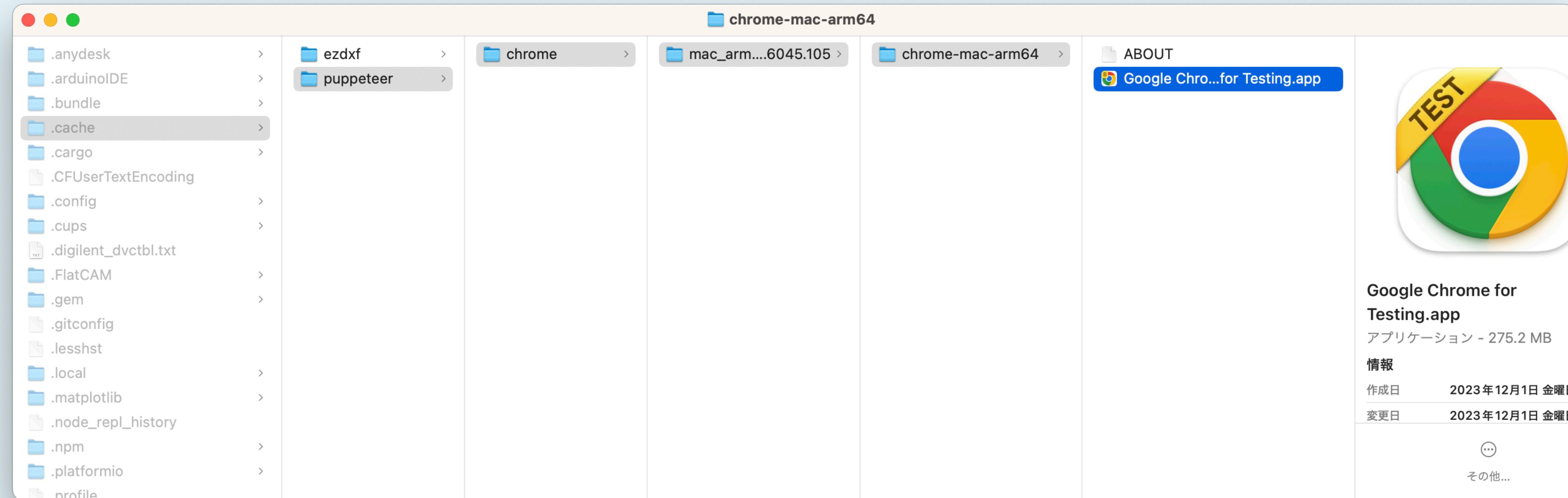
<https://github.com/kihapper/TheirTube>

puppeteerを使ってみよう

インストール

- 空のフォルダを新規作成、VSCodeにドラッグ&ドロップ
- ターミナルを開いてnpm init
- npm install -S puppeteer でインストール

```
{} package.json > {} dependencies > abc puppeteer
1  {
2    "name": "20231201-scraping_test",
3    "version": "1.0.0",
4    "description": "",
5    "main": "index.js",
6    ▷ デバッグ
7    "scripts": {
8      "test": "echo \"Error: no test specified\" && exit 1"
9    },
10   "author": "",
11   "license": "ISC",
12   "dependencies": [
13     "puppeteer": "^21.5.2"
14   ]
15 }
```



- puppeteerは自動でテスト用Google Chromeをインストールするが、サイズが大きいためnode_modulesではなく~/.cacheに入る
- 演習室のMacで作業する場合は毎回npm install すること

とりあえず開く&スクリーンショット撮影

1_launch.js

```
const puppeteer = require('puppeteer');

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    let page = await browser.newPage();
    await page.goto('https://www.youtube.com/');
    await page.screenshot({ path: "./ss.png" });
    await page.close();
    await browser.close();
};

main();
```

とりあえず開く&スクリーンショット撮影

1_launch.js

```
const puppeteer = require('puppeteer');

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    let page = await browser.newPage();
    await page.goto('https://www.youtube.com/');
    await page.screenshot({ path: "./ss.png" });
    await page.close();
    await browser.close();
};

main();
```

headlessをfalseにすると実際にブラウザが立ち上がってページ遷移の様子がチェックできる

とりあえず開く&スクリーンショット撮影

1_launch.js

```
const puppeteer = require('puppeteer');

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    let page = await browser.newPage();
    await page.goto('https://www.youtube.com/');
    await page.screenshot({ path: "./ss.png", fullPage: true});
    await page.close();
    await browser.close();
};

main();
```

fullPage:trueを追加するとページ全体のスクリーンショットも撮れる



ただし、Webページがスクリプトで動的に画像を読み込んだりしている場合、スクロール操作を自動化したり、ある程度の秒数待つ、のような操作をする必要も

その他のオプション

```
await puppeteer.launch({ headless: false ,args: ["--window-size=1920,1080"],timeout:0})
```

- ・ ウィンドウサイズによって画面のレイアウトや、出てくるHTMLタグが変わることもある
- ・ 標準だと30秒経って読み込みが終わらなかったり、要素が取得できないとエラーで終了
- ・ timeoutに0を指定すると無限に待ち続ける

asyncとawait

- これまでのコードは実行箇所がソースコードのどこか一つにあり、上から下に実行されていた
- Web系など、処理に時間がかかるものは順番に実行してると遅くなりがち
- 「処理Aの応答が帰ってきたらBを行う」という約束だけを決めて、処理を先に進めるのがasync
- 例えばファイル読み書きのためのfsモジュールも`require("fs").promises`とするとasyncバージョンが使える

awaitを使わずにasync関数を繋げる

2_async_intro.js

```
const puppeteer = require('puppeteer');

const main = async () =>
  puppeteer.launch({ headless: false })
    .then(browser => browser.newPage()
      .then(page => page.goto('https://www.youtube.com/'))
      .then(_response => page.screenshot({ path: './ss.png' }))
      .then(_ => page.close()
        .then(_ => browser.close()))));
main();
```

さっき実際に実行されていたのはこういうコード。
「Aしたら次にその結果を使ってBする」という処理の合成をしてからまとめて実行
(括弧がだんだんネストされてしまう)

await

```
const puppeteer = require('puppeteer');

const main = async () => {
  let browser = await puppeteer.launch({ headless: false });
  let page = await browser.newPage();
  await page.goto('https://www');
  await page.screenshot({ path });
  await page.close();
  await browser.close();
};

main();
```

asyncな関数を実行すると、Promise<A>という値が返ってくる。これに対して.thenが実行できる

awaitを使うと、その処理が終わるまで待機してPromiseの中身を取り出してくれる＝普通の関数のように扱える

mapとPromise.allを使って並列処理

3_map_async.js

```
const puppeteer = require('puppeteer');

const take_screen_shot = async (browser, url, index) => {
    let page = await browser.newPage();
    let path = `${index}.png`;
    await page.goto(url);
    await page.screenshot({ path: path });
    await page.close();
}

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    const urllist = [
        "https://www.youtube.com",
        "https://www.google.com",
        "https://www.geidai.ac.jp",
        "https://yahoo.co.jp"
    ];
    await Promise.all(urllist.map((url, index) => take_screen_shot(browser, url, index)));
    await browser.close();
}
```

mapとPromise.allを使って並列処理

3_map_async.js

```
const puppeteer = require('puppeteer');

const take_screen_shot = async (browser, url, index) => {
  let page = await browser.newPage();
  let path = `${index}.png`;
  await page.goto(url);
  await page.screenshot({ path: path });
  await page.close();
}

const main = async () => {
  let browser = await puppeteer.launch({ headless: false });
  const urllist = [
    "https://www.youtube.com",
    "https://www.google.com",
    "https://www.geidai.ac.jp",
    "https://yahoo.co.jp"
  ];
  await Promise.all(urllist.map((url, index) => take_screen_shot(browser, url, index)));
  await browser.close();
}
```

配列要素に対してasyncな関数をmapで全部に適用

Promise.all()はPromise<A>の配列を受け取って全部の処理が完了するまでのPromiseを返す=自動で並列実行！

自動でスクロールダウンする

```
async function autoScroll(page, maxScrolls) {
    await page.evaluate(async maxScrolls => {
        await new Promise((then) => {
            let distance = 1000;
            let scrolls = 0;
            let timer = setInterval(() => {
                window.scrollBy(0, distance);
                scrolls += 1;
                if (scrolls >= maxScrolls) {
                    clearInterval(timer);
                    then();
                }
            }, 100);
        });
    }, maxScrolls);
}

exports.autoScroll = autoScroll;
```

autoscroll.jsとして保存

別ファイルの関数を呼び出す

4_auto_scroll.js

```
const puppeteer = require('puppeteer');
const autoScroll = require("./autoscroll.js").autoScroll;

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    let page = await browser.newPage();
    await page.goto('https://www.youtube.com/');
    await autoScroll(page,10);
    await page.screenshot({ path: "ss_full.png", fullPage: true })
    await page.close();
    await browser.close();
}
main();
```

リンクを辿ってみる

5_youtube_hopper.js

```
const puppeteer = require('puppeteer');
const autoScroll = require("./autoscroll.js").autoScroll;

const main = async () => {
    let browser = await puppeteer.launch({ headless: false });
    let page = await browser.newPage();
    await page.goto('https://www.youtube.com/');
    await autoScroll(page, 1);
    for (let i = 0; i < 10; i++) {
        const urlList = await page.$$eval("a#thumbnail", elems => elems.map(elem => elem.href));
        const url = urlList[0];
        console.log(url)
        await page.goto(url);
        await autoScroll(page, 10);
        await page.screenshot({ path: `${i}.png` , fullPage: true });
    }
    await page.close();
    await browser.close();
}
main();
```