SPORTS ANALYTICS

Brøndby AS

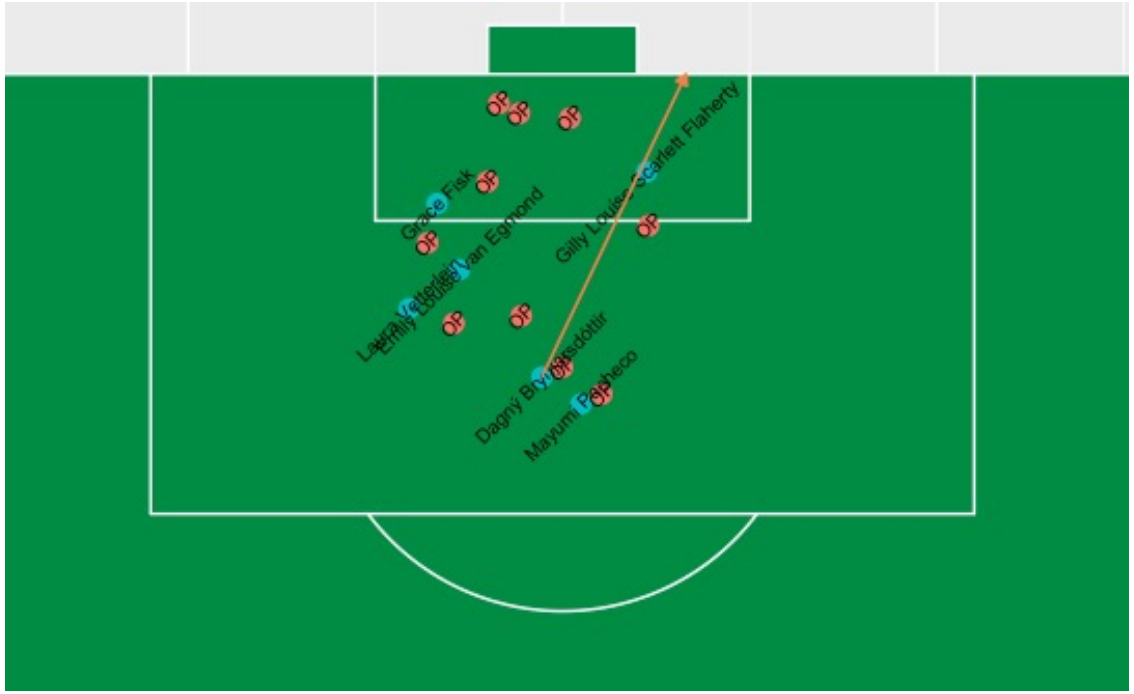
Kvinder & Fodbold

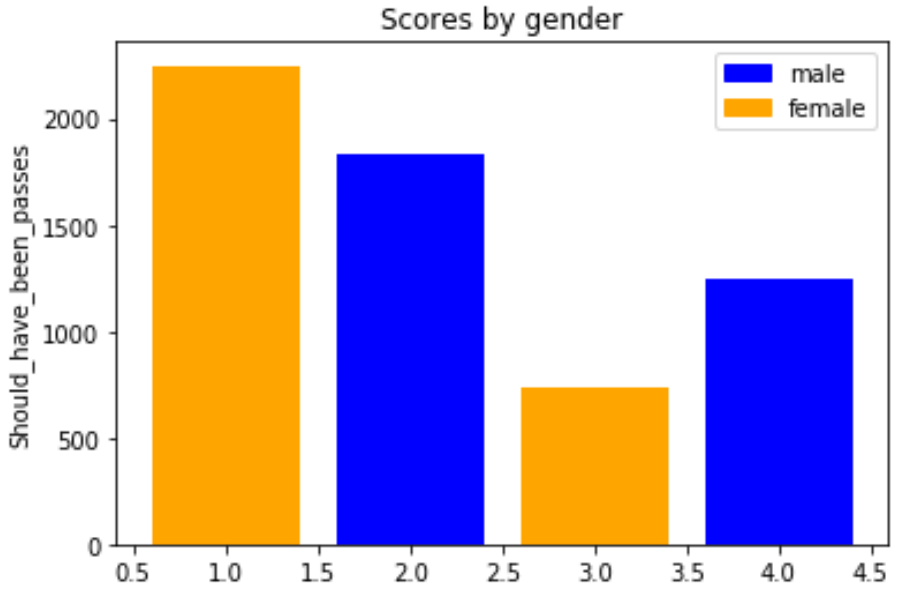
PRIMERA DIVISIÓN FEMENINA TABLE

#	Team	MP	D	P
1	Barcelona	27	+138	**81**
2	Real Sociedad	27	+20	**59**
3	Atlético Madrid	27	+37	**53**
4	Real Madrid	27	+8	**53**
5	Granadilla Ten…	27	+2	**53**

Agenda

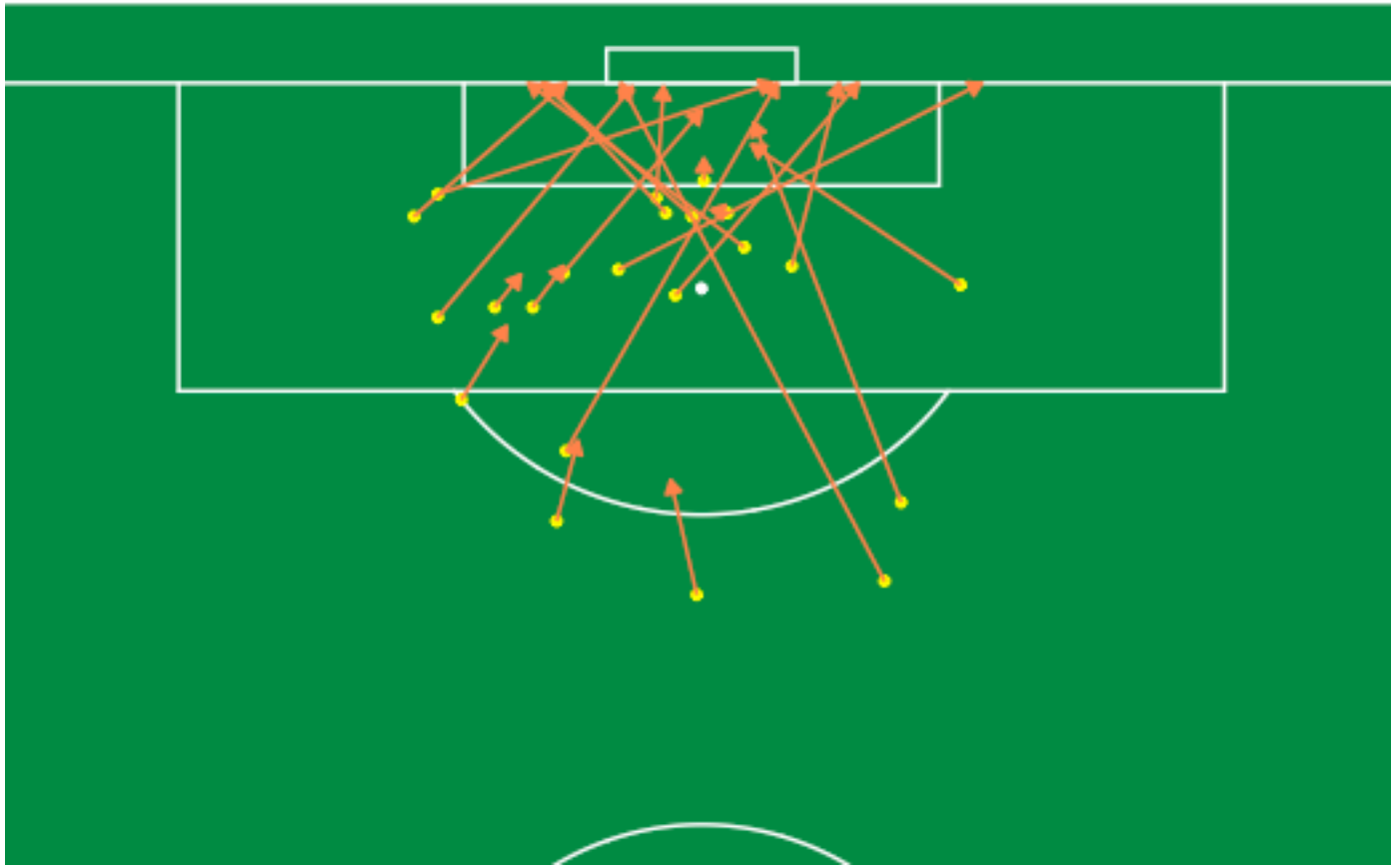
- Overview Statsbomb
  - lineups
  - events
  - matches
- Statsbomb i Mongo
  - import herrekampe
- Events – shots
  - import fra statsbomb
  - all shots one match
  - one shot – position
    - ggsoccer
  - all shots – position and arrow
  - one shot - freezeframe





Plot all shots in one game

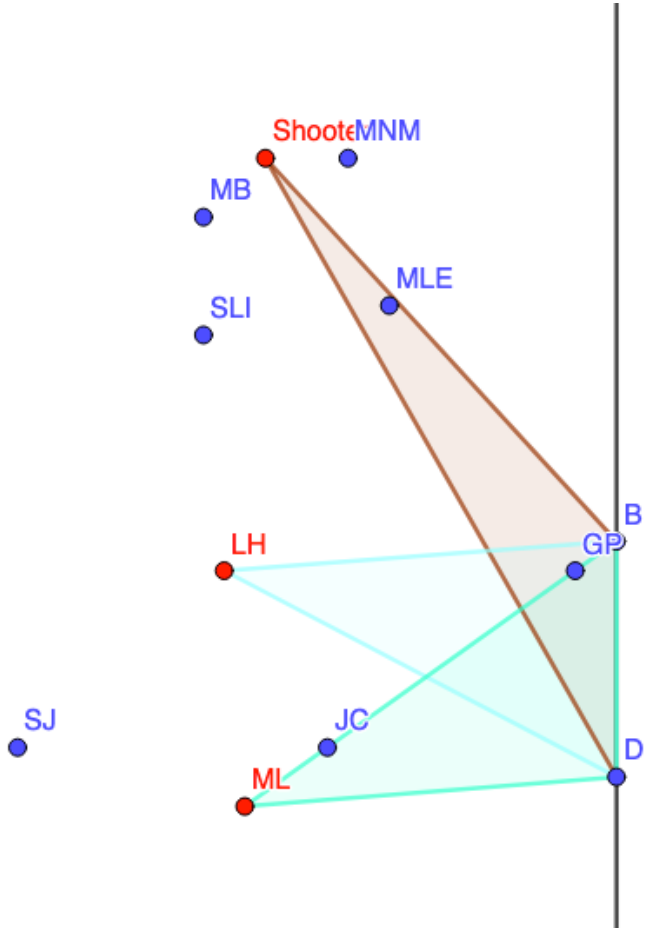
```
shots <- data.frame(x = c(90, 85, 82, 78, 83, 74, 94, 91),
                    y = c(43, 40, 52, 56, 44, 71, 60, 54))
```



	location	shot.end_location
1	c(113.3, 41.9)	c(119.8, 41.6, 1.6)
2	c(112.2, 40.4)	c(120, 46.7, 1.6)
3	c(110.4, 38.2)	c(120, 47.3, 1.3)
4	c(106.3, 51.1)	c(119.8, 42.9, 1.3)
5	c(112.2, 52.1)	c(120, 45.7, 0.2)
6	c(98.5, 45.7)	c(120, 36.8, 1.2)
7	c(112.4, 41.5)	c(120, 46.6, 1.5)
8	c(90.1, 40.2)	c(96.8, 41.3)
9	c(107.6, 41.1)	c(120, 33.4, 1.9)
10	c(109.3, 36.2)	c(120, 34.2, 1.6)
11	c(90.9, 32.3)	c(120, 43.4, 5.9)
12	c(95.5, 31.6)	c(117.7, 37.8, 1.4)
13	c(114.3, 39.9)	c(115.6, 39.9, 0.3)
14	c(101.5, 50.1)	c(105.8, 48.2, 0)
15	c(94.4, 46.1)	c(99.1, 45.2)
16	c(112.4, 38.9)	c(112.6, 39.6)

Kvinder & Fodbold

Find all non-teammates
For each teammate
compute number of nont in triangle



Filter

	location	shot.end_location	shot.freeze_frame.location	shot.freez
1	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(98.5, 58.2)	TRUE
2	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(118.4, 42.8)	FALSE
3	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(111.8, 42.9)	TRUE
4	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(109.1, 43.8)	FALSE
5	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(106.9, 61.6)	FALSE
6	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(110.3, 52.5)	FALSE
7	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(112, 49.6)	FALSE
8	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(97.4, 56.1)	FALSE
9	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(106.9, 44.4)	TRUE
10	c(112.2, 52.1)	c(120, 45.7, 0.2)	c(115.3, 51.6)	FALSE

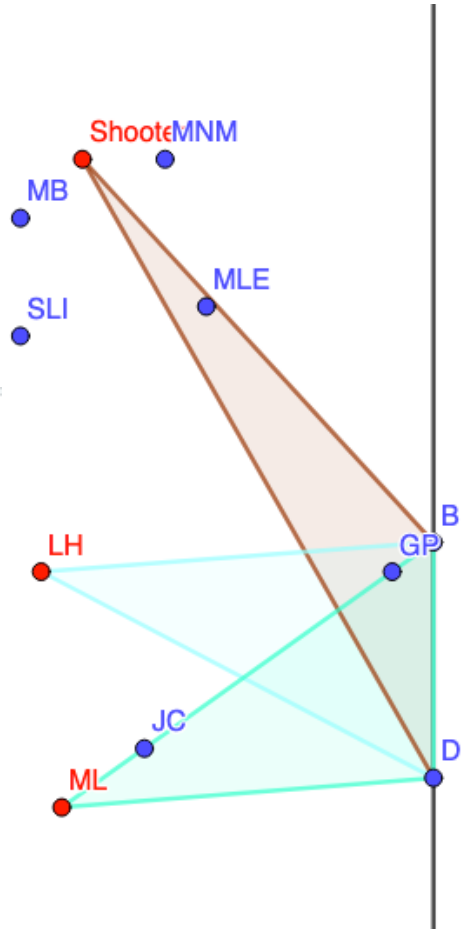
	location	shot.end_location
1	c(112.2, 52.1)	c(120, 45.7, 0.2)

	location	shot.end_location
1	112.2	120.0
2	52.1	120.0
3	112.2	45.7
4	52.1	45.7

Kvinder & Fodbold

Find all non-teammates
For each teammate
compute number of nont in triangle

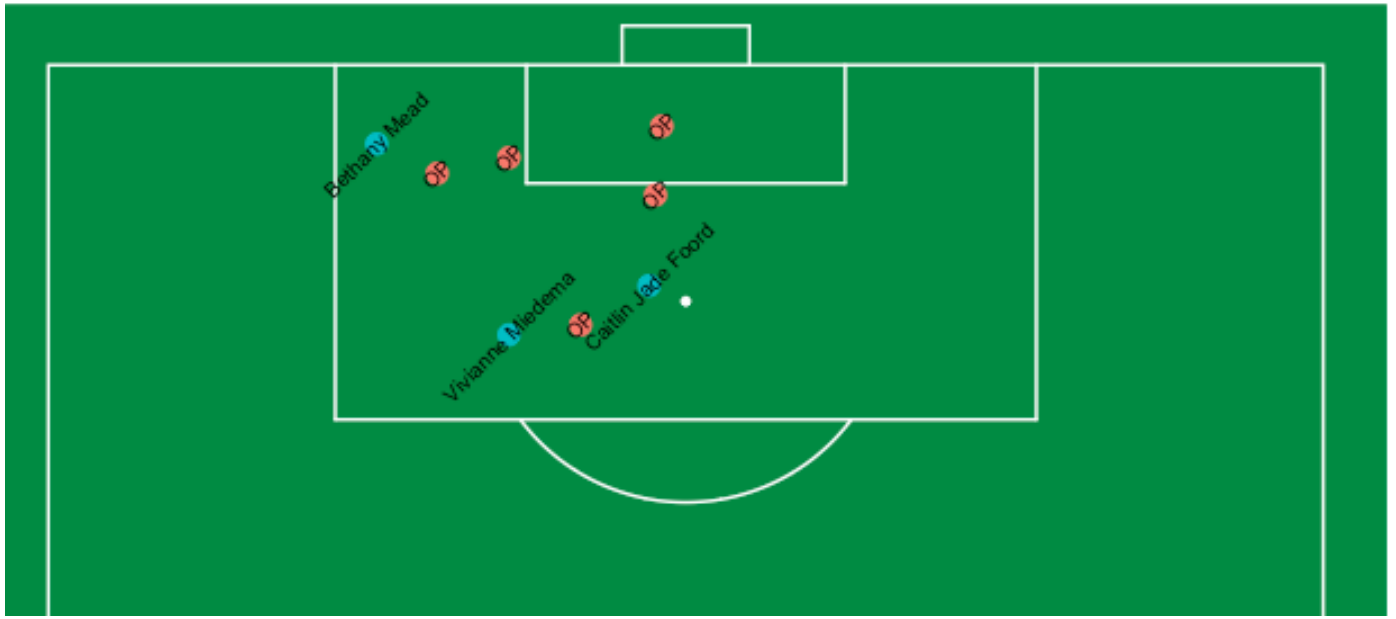
	location	player$id	player$name	position$id	position$name	teammate
1	c(116, 59.4)	15619	Bethany Mead	12	Right Midfield	TRUE
2	c(108.8, 42.3)	11338	Caitlin Jade Foord	19	Center Attacking Midfield	TRUE
3	c(116.9, 41.5)	42787	Mackenzie Arnold	1	Goalkeeper	FALSE
4	c(115.3, 51.1)	31157	Hawa Cissoko	5	Left Center Back	FALSE
5	c(114.5, 55.6)	15724	Mayumi Pacheco	8	Left Wing Back	FALSE
6	c(113.4, 41.9)	34232	Grace Fisk	4	Center Back	FALSE
7	c(106.8, 46.6)	10124	Dagný Brynjarsdóttir	21	Left Wing	FALSE
8	c(110.6, 37)	18151	Gilly Louise Scarlett Flaherty	3	Right Center Back	FALSE



Kvinder & Fodbold

	team.name	player.name	position.id	shot.end_location	shot.outcome.name	shot.freeze_frame
1	Arsenal WFC	Vivianne Miedema	23	c(119.8, 42.9, 1.3)	Saved	*1 variable*

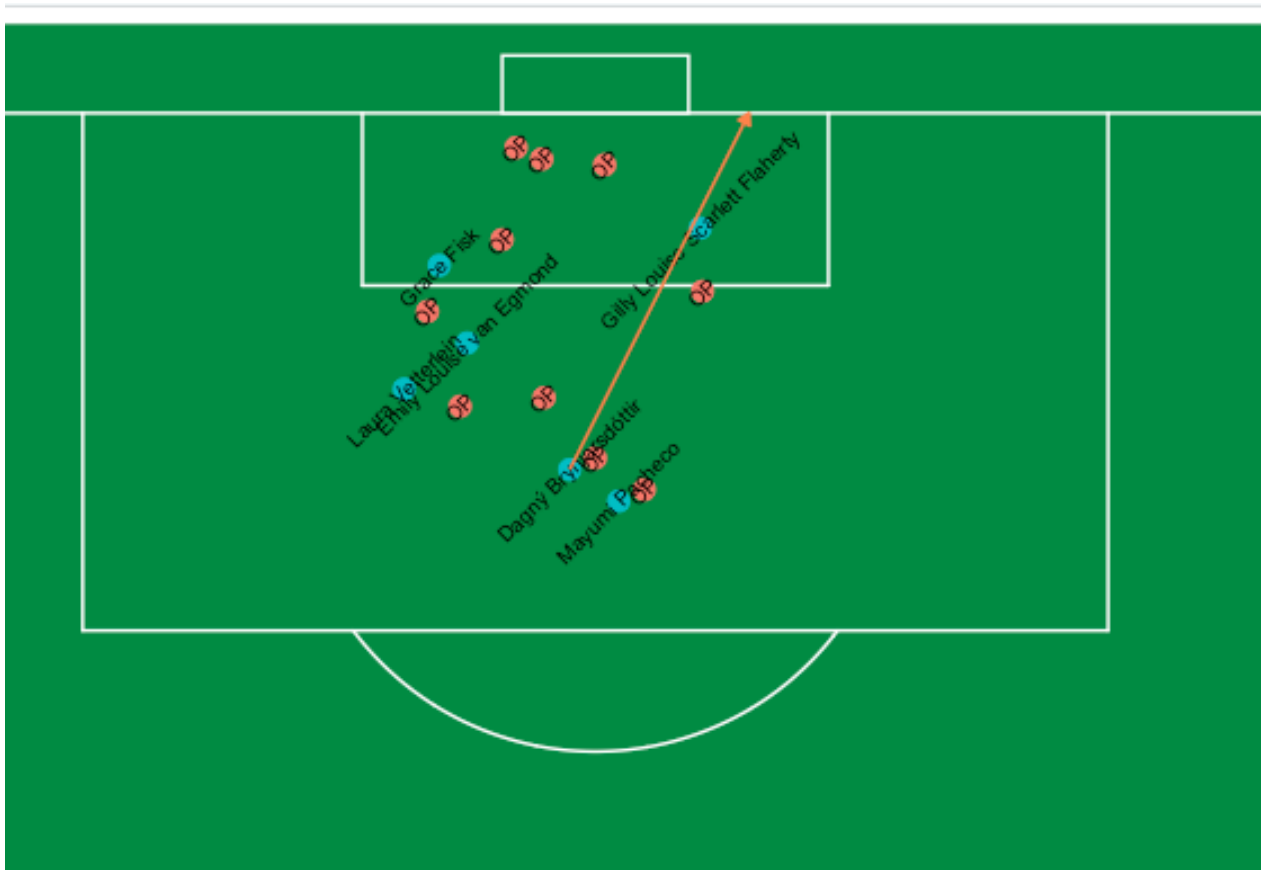
	location	player$id	player$name	position$id	position$name	teammate
1	c(116, 59.4)	15619	Bethany Mead	12	Right Midfield	TRUE
2	c(108.8, 42.3)	11338	Caitlin Jade Foord	19	Center Attacking Midfield	TRUE
3	c(116.9, 41.5)	42787	Mackenzie Arnold	1	Goalkeeper	FALSE
4	c(115.3, 51.1)	31157	Hawa Cissoko	5	Left Center Back	FALSE
5	c(114.5, 55.6)	15724	Mayumi Pacheco	8	Left Wing Back	FALSE
6	c(113.4, 41.9)	34232	Grace Fisk	4	Center Back	FALSE
7	c(106.8, 46.6)	10124	Dagný Brynjarsdóttir	21	Left Wing	FALSE
8	c(110.6, 37)	18151	Gilly Louise Scarlett Flaherty	3	Right Center Back	FALSE



Kvinder & Fodbold

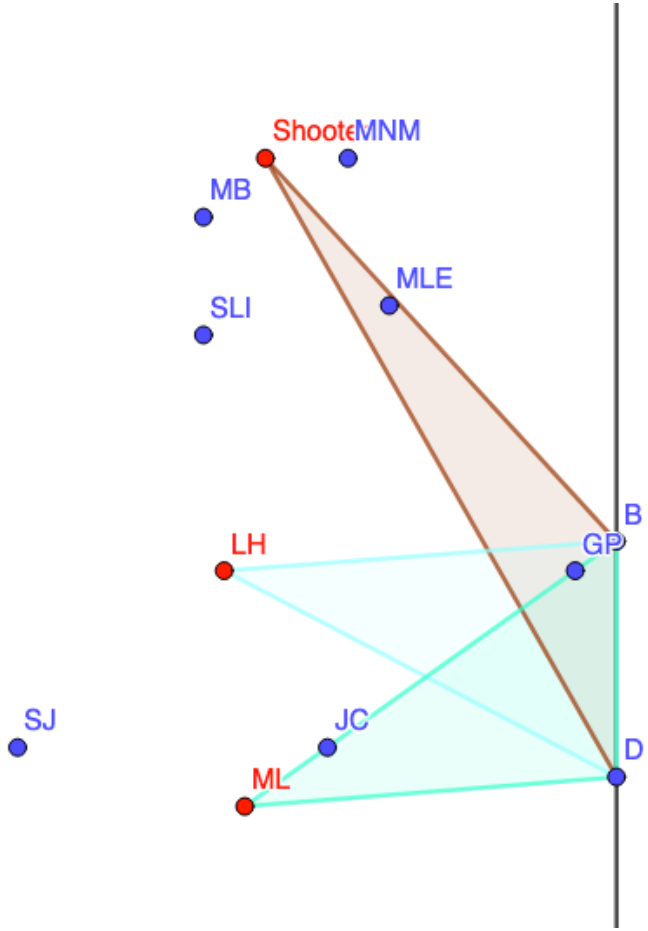
	team.name	player.name	location	shot.end_location	shot.outcome.name	shot.freeze_frame
1	West Ham United LFC	Dagný Brynjarsdóttir	c(107.6, 41.1)	c(120, 33.4, 1.9)	Off T	*1 variable*

	x	y	name	team	shooter
1	107.6	41.1	Dagný Brynjarsdóttir	TRUE	5
2	106.9	37.9	OP	FALSE	2
3	118.4	42.3	OP	FALSE	2
4	109.8	45.8	OP	FALSE	2
5	113.1	47.2	OP	FALSE	2
6	115.6	44.0	OP	FALSE	2
7	118.8	43.4	OP	FALSE	2
8	110.1	42.2	OP	FALSE	2
9	113.8	35.4	OP	FALSE	2
10	118.2	39.6	OP	FALSE	2
11	108.0	40.0	OP	FALSE	2
12	112.0	45.5	Emily Louise van Egmond	TRUE	2
13	110.4	48.2	Laura Vetterlein	TRUE	2
14	116.0	35.5	Gilly Louise Scarlett Flaherty	TRUE	2
15	114.7	46.7	Grace Fisk	TRUE	2
16	106.5	39.0	Mayumi Pacheco	TRUE	2



Kvinder & Fodbold

Find all non-teammates
For each teammate
compute number of nont in triangle




```
freeze_frame: [
  {
    location: [ 102, 35 ],
    player: { id: 15547, name: 'Melissa Lawley' },
    position: { id: 24, name: 'Left Center Forward' },
    teammate: true
  },
  {
    location: [ 101, 43 ],
    player: { id: 15555, name: 'Lauren Hemp' },
    position: { id: 22, name: 'Right Center Forward' },
    teammate: true
  },
  {
    location: [ 118, 43 ],
    player: { id: 4640, name: 'Rut Hedvig Lindahl' },
    position: { id: 1, name: 'Goalkeeper' },
    teammate: false
  },
  {
    location: [ 109, 52 ],
    player: { id: 4633, name: 'Magdalena Lilly Eriksson' },
    position: { id: 5, name: 'Left Center Back' },
    teammate: false
  },
  {
    location: [ 100, 51 ],
    player: { id: 15549, name: 'Sophie Louise Ingle' },
    position: { id: 9, name: 'Right Defensive Midfield' },
    teammate: false
  },
  {
    location: [ 100, 55 ],
    player: { id: 4642, name: 'Millie Bright' },
    position: { id: 3, name: 'Right Center Back' },
    teammate: false
  },
  {
    location: [ 91, 37 ],
    player: { id: 4647, name: 'So-Yun Ji' },
    position: { id: 19, name: 'Center Attacking Midfield' },
    teammate: false
  },
  {
    location: [ 107, 57 ],
    player: { id: 10395, name: 'Maren Nævdal Mjelde' },
    position: { id: 11, name: 'Left Defensive Midfield' },
    teammate: false
  },
  {
    location: [ 106, 37 ],
    player: { id: 19422, name: 'Jessica Carter' },
    position: { id: 2, name: 'Right Back' },
    teammate: false
  }
]
}
```

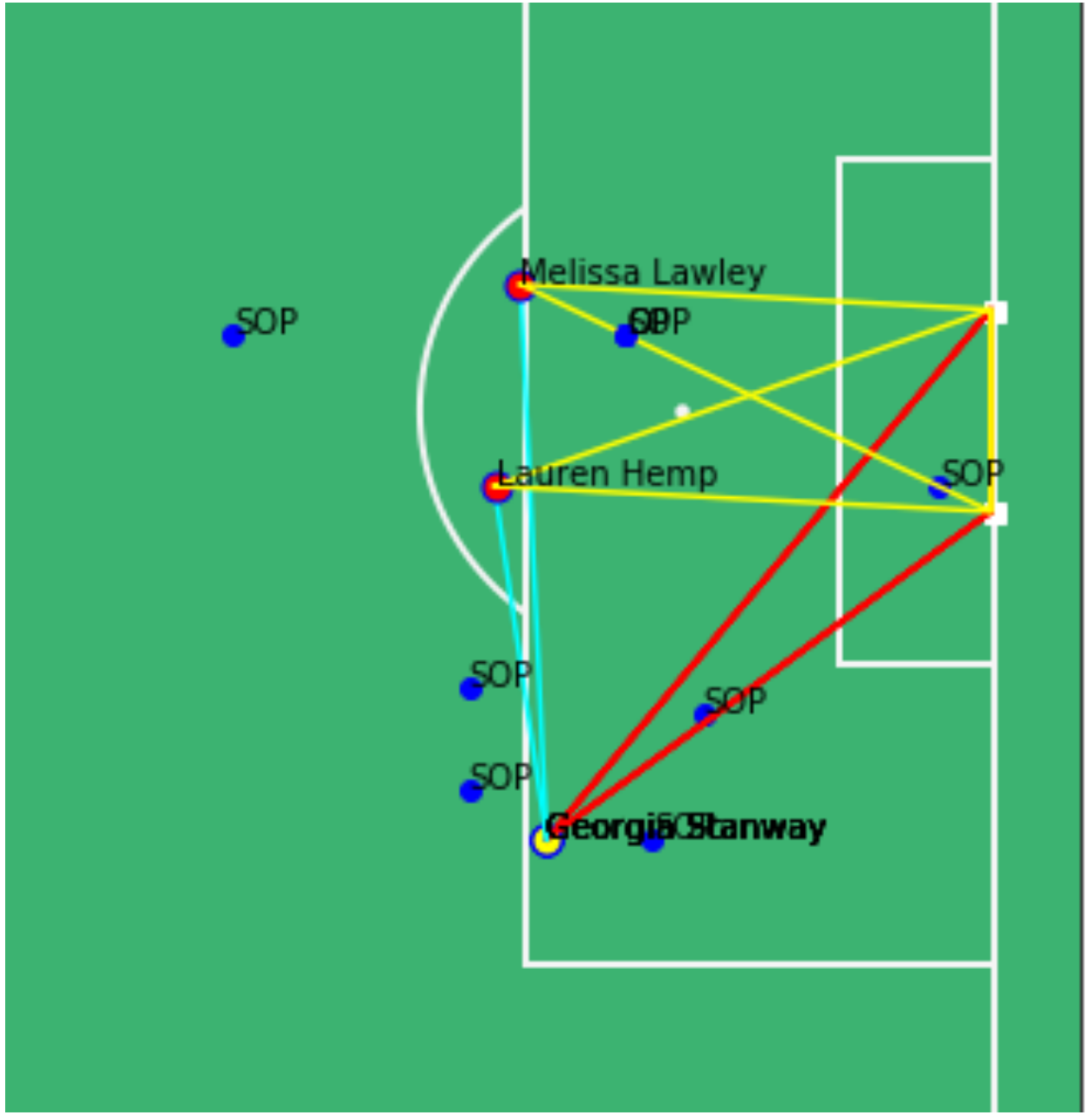
Kvinder & Fodbold
Freeze-Frame

- Number of players in tri
- Distance of pass to teamplayer
- Distance to passline from opponent
- Teamplayer xG
    - Distance, angle

This frame:

If for all team-others
shooter tri < other tri
AND
Other gdist < (shooter + tol)
AND
Passdist Shooter-Other-ratio > 0.2
Then
should have been a pass

Conlusion: Should have been a pass

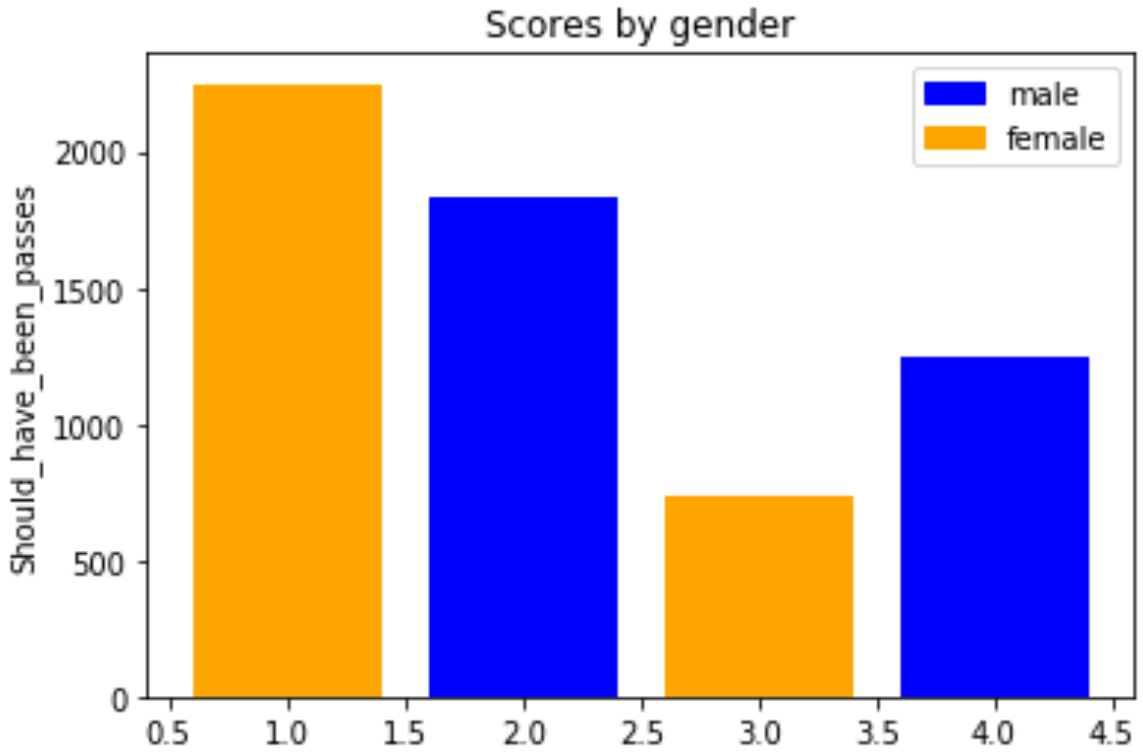


Kvinder & Fodbold

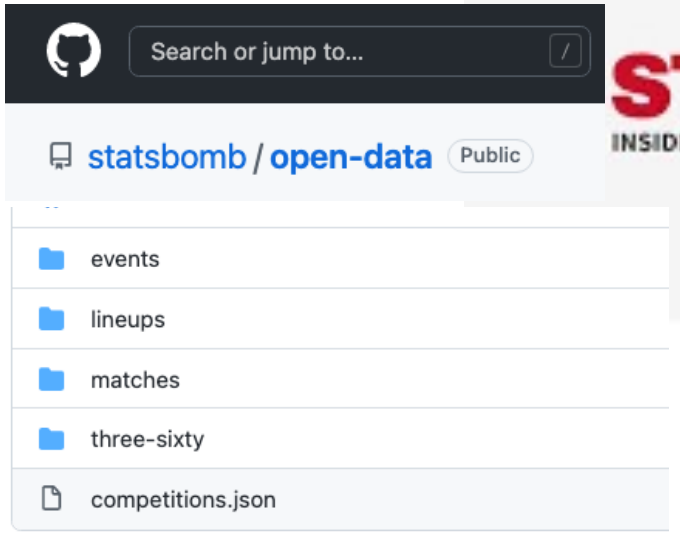
Bias ..

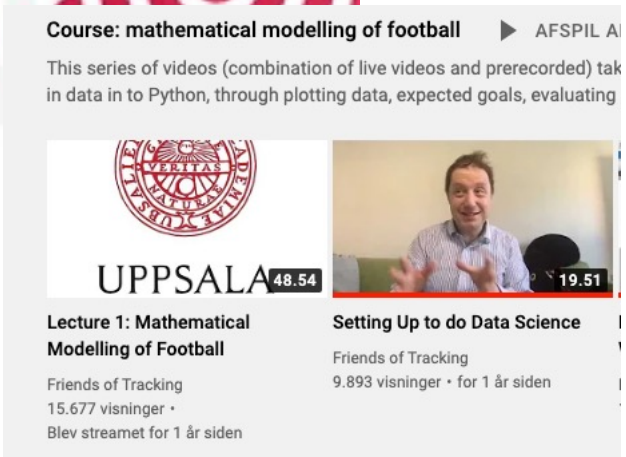
find({"type.name":"Shot", "gender":"**female**",
"position.id" : {"$in":**striker**_player}})

find({"type.name":"Shot", "gender":"**male**",
"position.id" : {"$in":**def**_player}})



Statsbomb





Friends-of-Tracking-Data-FoTD / **SoccermaticsForPython** Public

STATSBOMB
INSIDE EVERY PASS, EVERY SHOT, EVERY MOVE

Search or jump to... /

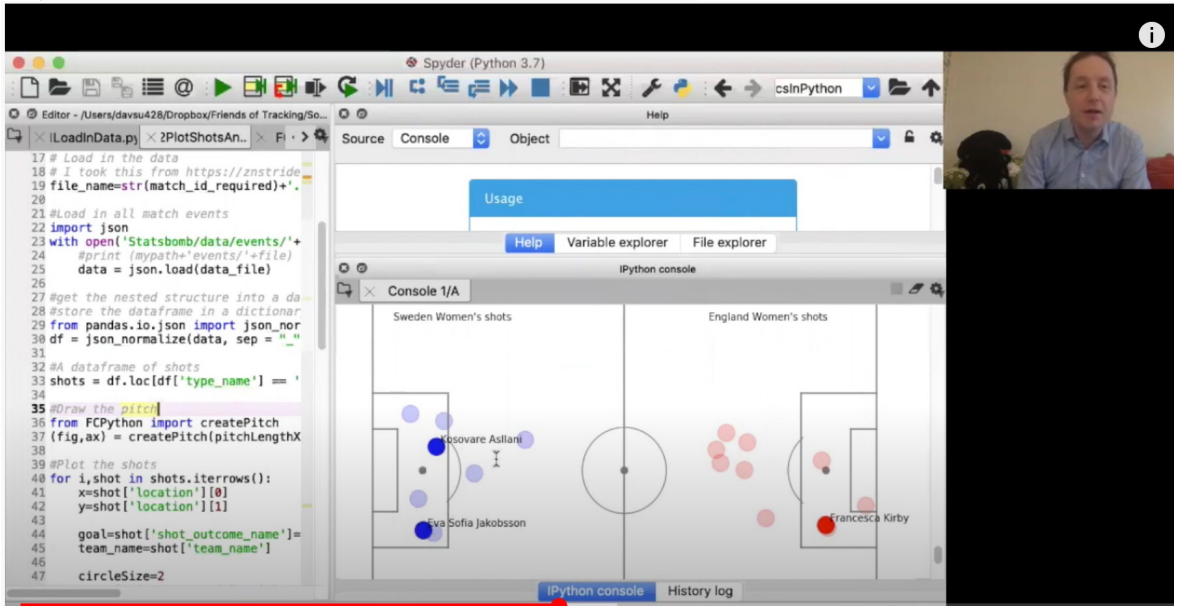
statsbomb / open-data Public

- events
- lineups
- matches
- three-sixty

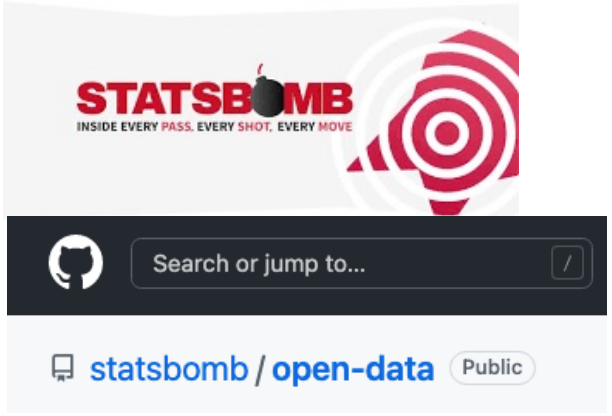
Sample event from 69301.json with 3291 events

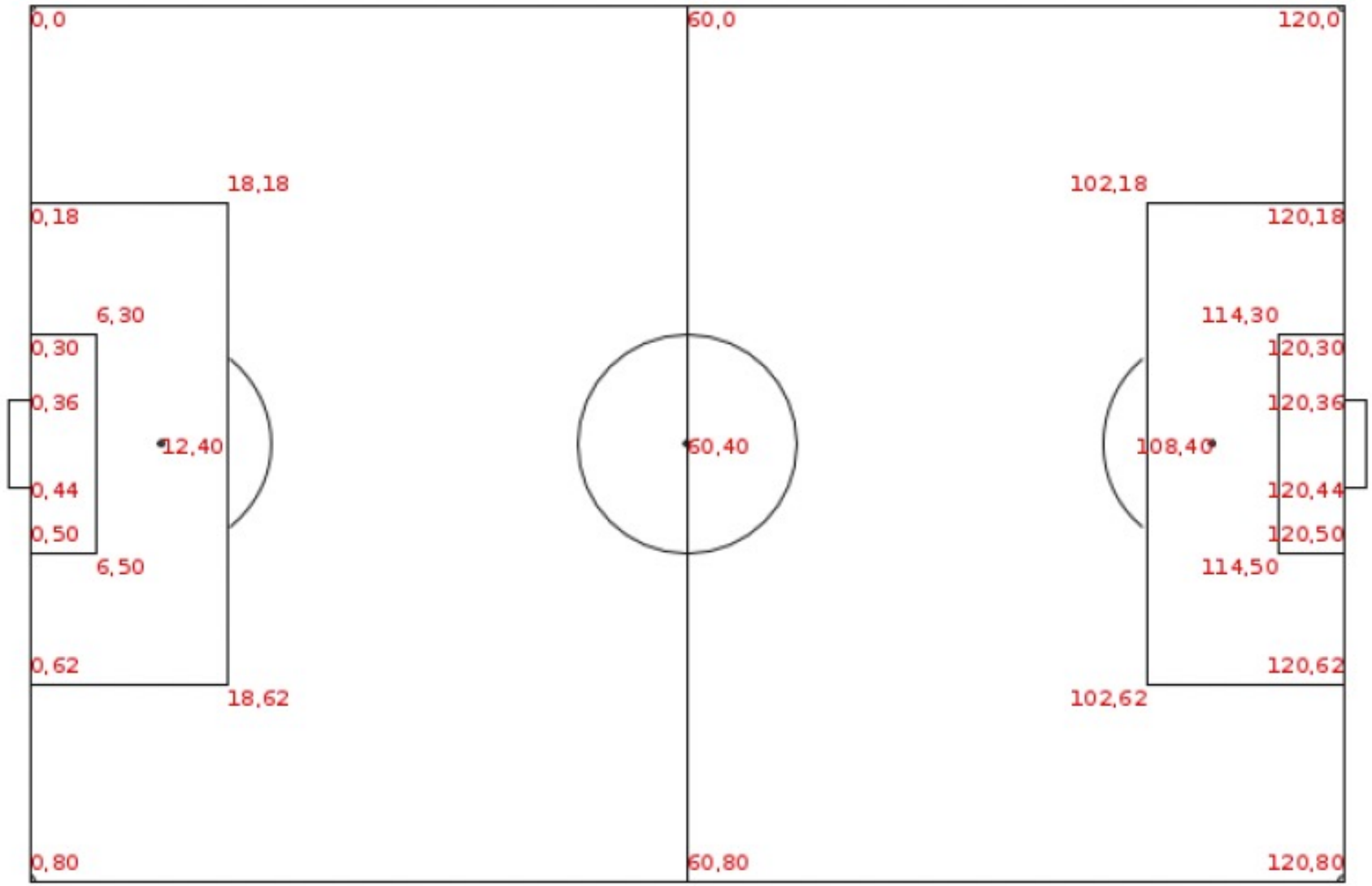
David laver

1) Shots map
2) Passes map




```
}, {
  id : ecec23b8-f03d-4bee-80df-9fabec558187,
  index : 9,
  period : 1,
  timestamp : 00:00:05.143,
  minute : 0,
  second : 5,
  type : {
    id : 30,
    name : Pass
  },
  possession : 2,
  possession_team : {
    id : 865,
    name : England Women's
  },
  play_pattern : {
    id : 9,
    name : From Kick Off
  },
  team : {
    id : 865,
    name : England Women's
  },
  player : {
    id : 4641,
    name : Francesca Kirby
  },
  position : {
    id : 15,
    name : Left Center Midfield
  },
  location : [ 82.6, 37.6 ],
  duration : 1.173625,
  related_events : [ ebb46045-f1ab-4c25-88b8-fc7ea165b52d ],
  pass : {
    recipient : {
      id : 10178,
      name : Lucy Bronze
    },
    length : 21.317833,
    angle : 1.7691119,
    height : {
      id : 1,
      name : Ground Pass
    },
    end_location : [ 78.4, 58.5 ],
    body_part : {
      id : 40,
      name : Right Foot
    }
  }
```

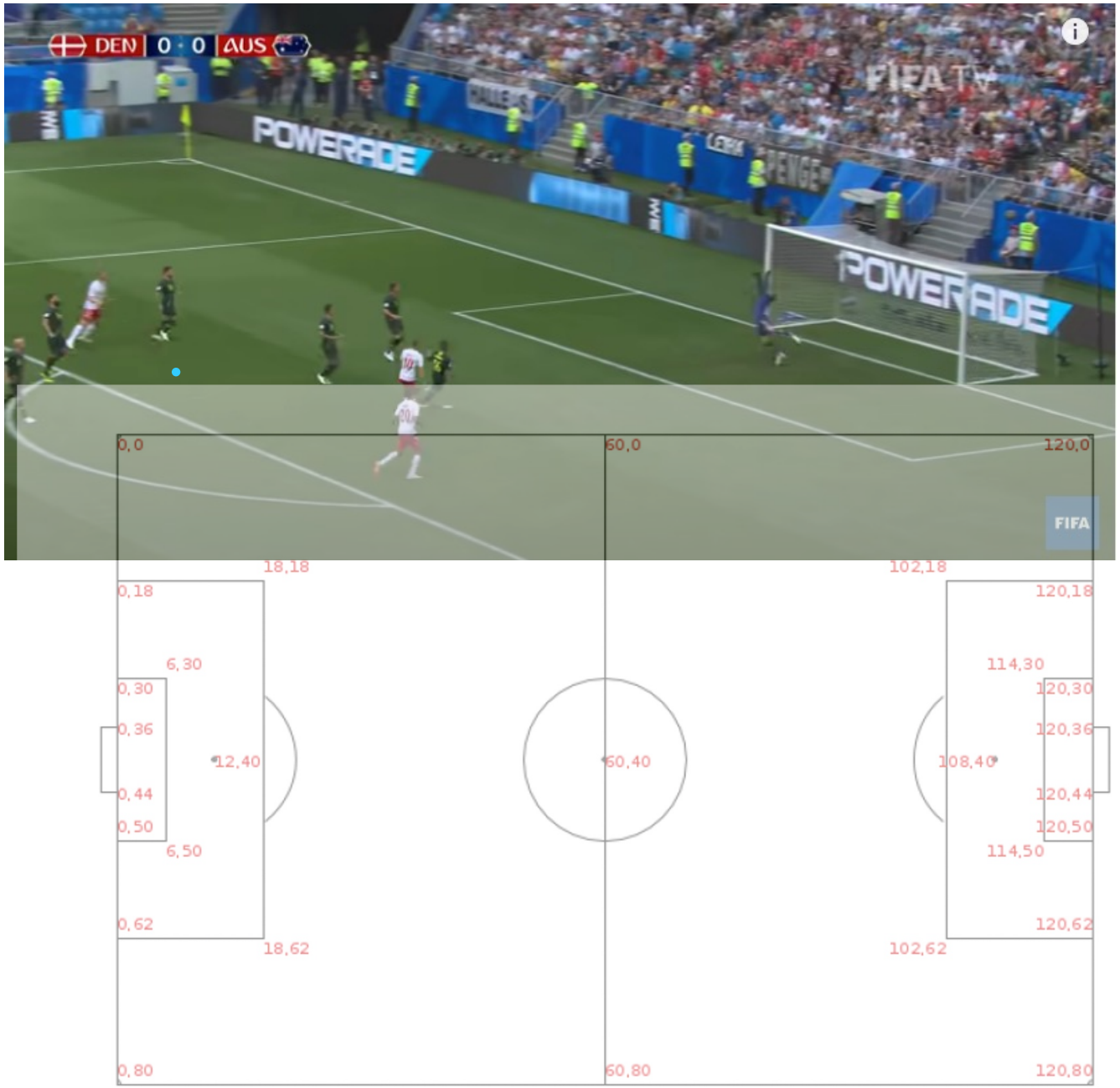

STATSBOMB
INSIDE EVERY PASS, EVERY SHOT, EVERY MOVE
Search or jump to...
/
statsbomb / open-data
Public
events
lineups
matches
three-sixty
competitions.json


0,0
60,0
120,0
18,18
102,18
0,18
120,18
6,30
114,30
0,30
120,30
0,36
120,36
12,40
60,40
108,40
0,44
120,44
0,50
120,50
6,50
114,50
0,62
120,62
18,62
102,62
0,80
60,80
120,80

7547.json

- events
- lineups
- matches
- three-sixty
- competitions.json

7547.json



STATSBOMB
INSIDE EVERY PASS, EVERY SHOT, EVERY

events
lineups
matches
three-sixty
competitions.j

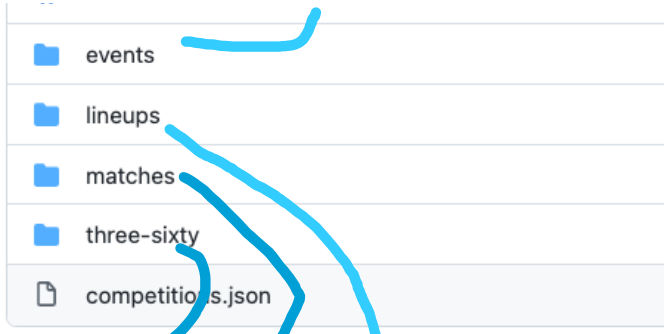
events — vim ego.json — 104×60


```
{
  id : b54f83ed-8ddb-4864-9b0b-ccc1f4f95da0,
  index : 214,
  period : 1,
  timestamp : 00:06:07.640,
  minute : 6,
  second : 7,
  type : {
    id : 16,
    name : Shot
  },
  possession : 12,
  possession_team : {
    id : 776,
    name : Denmark
  },
  play_pattern : {
    id : 4,
    name : From Throw In
  },
  team : {
    id : 776,
    name : Denmark
  },
  player : {
    id : 3043,
    name : Christian Dannemann Eriksen
  },
  position : {
    id : 19,
    name : Center Attacking Midfield
  },
  location : [ 104.0, 39.0 ],
  duration : 0.6,
  related_events : [ ef2b6ad0-caf8-47c8-b086-d252fc7834aa ],
  shot : {
    statsbomb_xg : 0.20277502,
    end_location : [ 120.0, 37.8, 2.5 ],
    key_pass_id : 9eac306c-fadb-4bf3-bcc2-592e03882bd5,
    first_time : true,
    technique : {
      id : 93,
      name : Normal
    },
    type : {
      id : 87,
      name : Open Play
    },
    outcome : {
      id : 97,
      name : Goal
    },
    body_part : {
      id : 38,
      name : Left Foot
    },
```

```
, {
id : ef2b6ad0-caf8-47c8-b086-d252fc7834aa,
index : 215,
period : 1,
timestamp : 00:06:08.240,
minute : 6,
second : 8,
type : {
  id : 23,
  name : Goal Keeper
},
possession : 12,
possession_team : {
  id : 776,
  name : Denmark
},
play_pattern : {
  id : 4,
  name : From Throw In
},
team : {
  id : 792,
  name : Australia
},
player : {
  id : 3240,
  name : Mathew Ryan
},
position : {
  id : 1,
  name : Goalkeeper
},
location : [ 3.0, 43.0 ],
related_events : [ b54f83ed-8ddb-4864-9b0b-ccc1f4f95da0 ],
goalkeeper : {
  technique : {
    id : 45,
    name : Diving
  },
  type : {
    id : 26,
    name : Goal Conceded
  },
  outcome : {
    id : 55,
    name : No Touch
  },
  position : {
    id : 44,
    name : Set
  }
```

Three-sixty folderen rummer trackingdata for 51 kampe.
Desværre ikke for DK's kampe.
3788753 er Rusland vs Finland

3788753.json har ca 3800 events



3788753.json opstillingen for de to hold

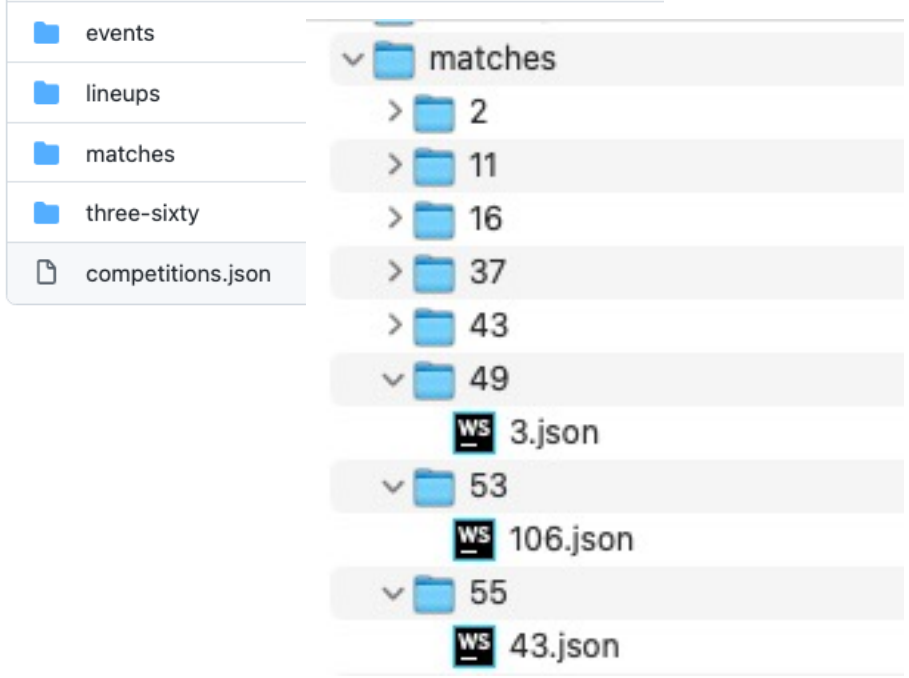
55/43.json has a record for matchid 3788753 (and 49 other games)

3788753.json has the tracking of that match

Lineups

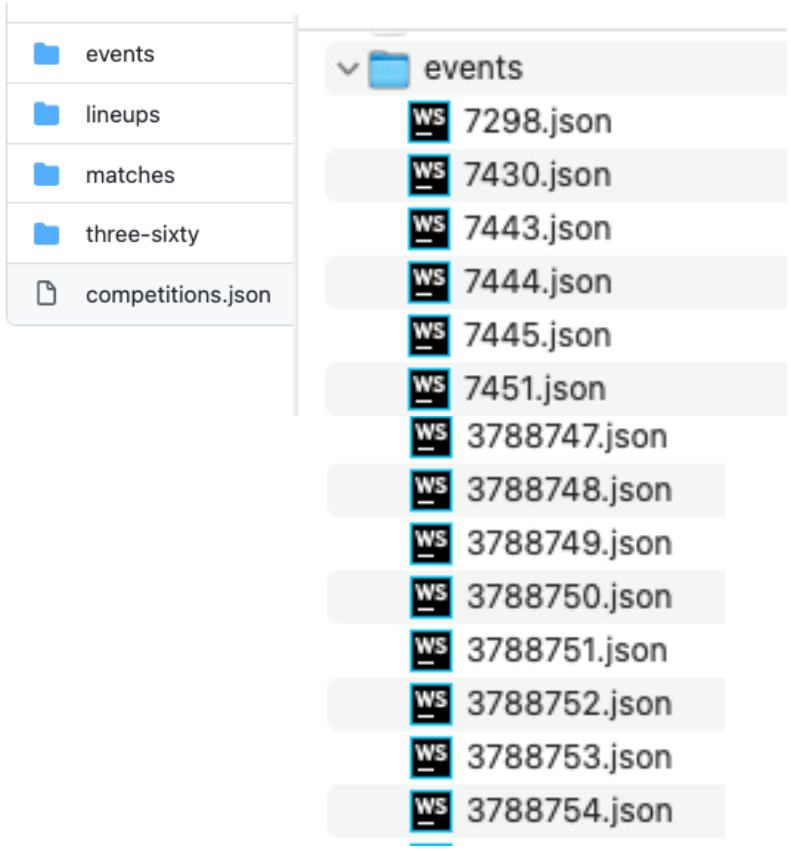
```
=> jq '.[1].lineup[9]' 3788753.json
{
  "player_id": 15416,
  "player_name": "Jukka Raitala",
  "player_nickname": null,
  "jersey_number": 22,
  "country": {
    "id": 77,
    "name": "Finland"
  },
  "cards": [],
  "positions": [
    {
      "position_id": 7,
      "position": "Right Wing Back",
      "from": "00:00",
      "to": "74:26",
      "from_period": 1,
      "to_period": 2,
      "start_reason": "Starting XI",
      "end_reason": "Substitution - Off (Tactical)"
    }
  ]
}
```

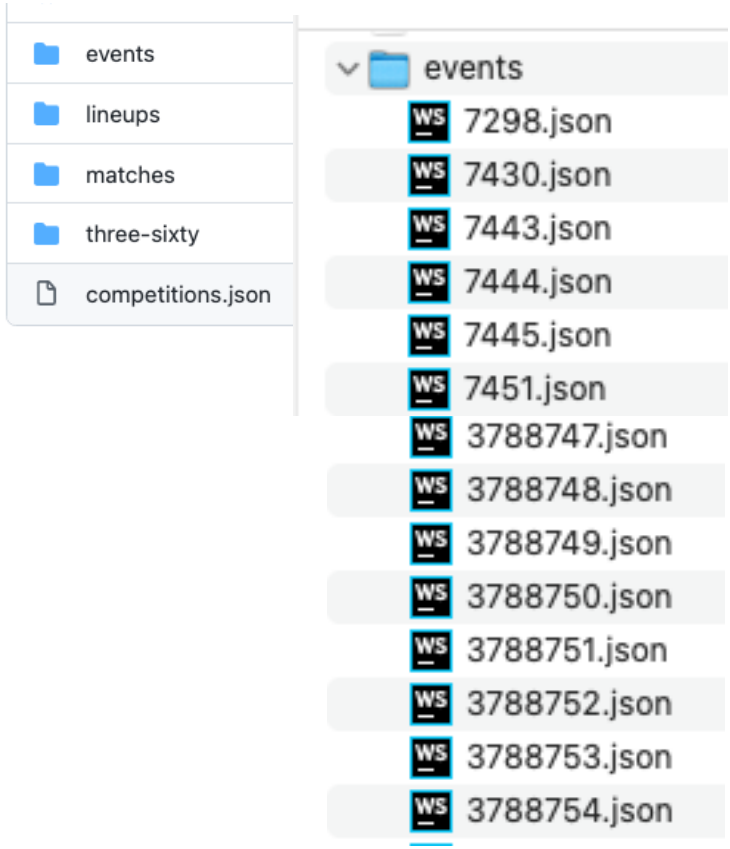
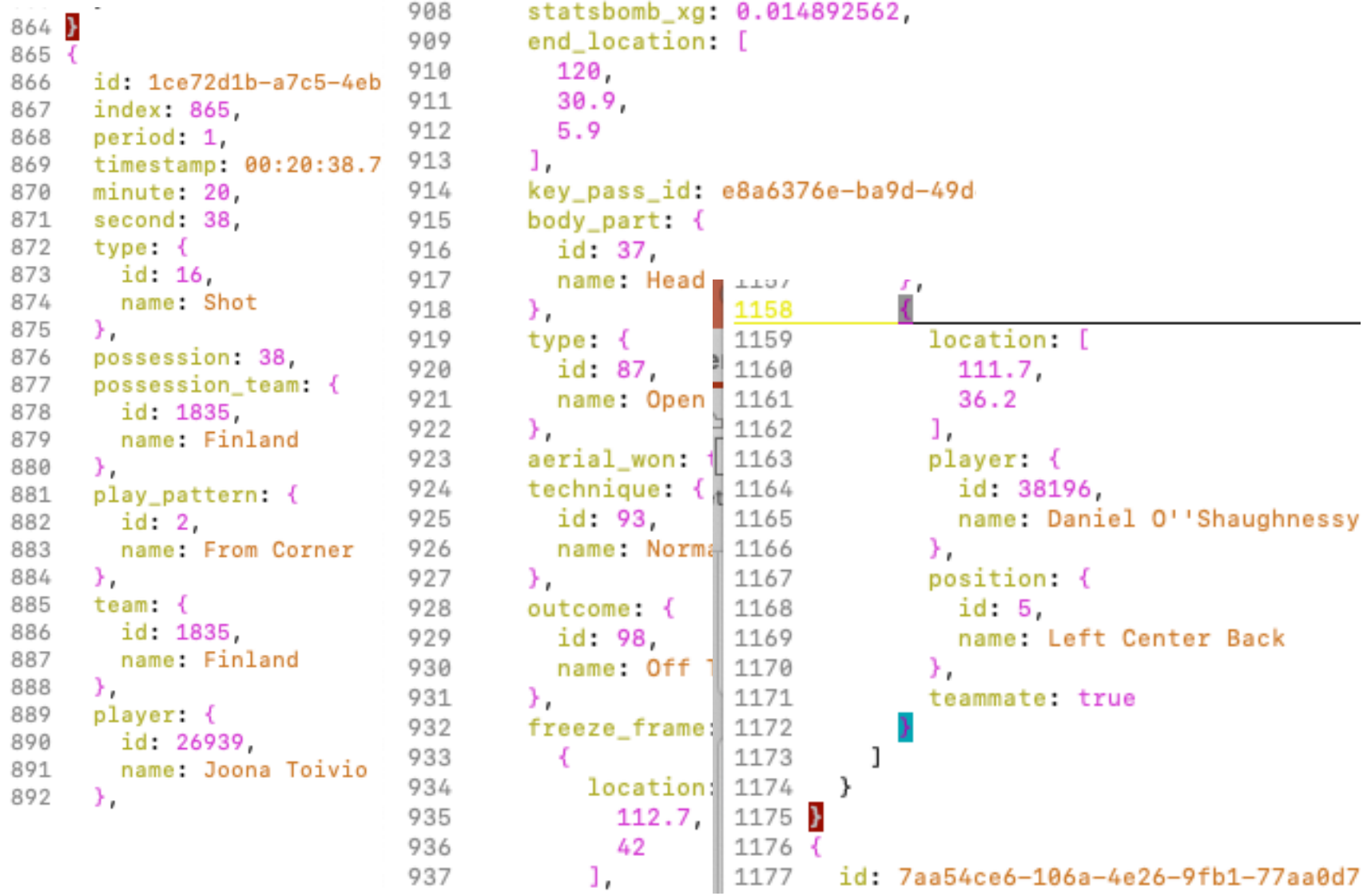
Filen 43.json
med 51 kampe




```
2295    }
2296  }, {
2297    match_id : 3788753,
2298    match_date : 2021-06-16,
2299    kick_off : 15:00:00.000,
2300    competition : {
2301      competition_id : 55,
2302      country_name : Europe,
2303      competition_name : UEFA Euro
2304    },
2305    season : {
2306      season_id : 43,
2307      season_name : 2020
2308    },
2309    home_team : {
2310      home_team_id : 1835,
2311      home_team_name : Finland,
2312      home_team_gender : male,
2313      home_team_group : Group B,
2314      country : {
2315        id : 77,
2316        name : Finland
2317      },
2318      managers : [ {
2319        id : 3622,
2320        name : Markku Kanerva,
2321        nickname : null,
2322        dob : 1964-05-24,
2323        country : {
2324          id : 77,
2325          name : Finland
2326        }
2327      } ]
2328    },
2329    away_team : {
2330      away_team_id : 796,
2331      away_team_name : Russia,
2332      away_team_gender : male,
2333      "away_team_group" : "Group B",
2334      country : {
2361    competition_stage : {
2362      id : 10,
2363      name : Group Stage
2364    },
2365    stadium : {
2366      id : 4726,
2367      name : Saint-Petersburg Stadium,
2368      country : {
2369        id : 188,
2370        name : Russia
2371      }
2372    },
2373    referee : {
2374      id : 293,
2375      name : Danny Desmond Makkelie,
2376      country : {
2377        id : 160,
2378        name : Netherlands
2379      }
2380    }
2381  }, {
```

3788753.json indeholder 3806 events for kampen Rusland – Finland.




```
   1 "Tactical Shift"
   2 "50/50"
   2 "Referee Ball-Drop"
   2 "Starting XI"
   3 "Player Off"
   3 "Player On"
   4 "Half End"
   4 "Half Start"
   8 "Substitution"
  14 "Injury Stoppage"
  19 "Dispossessed"
  20 "Dribbled Past"
  25 "Shot"
  26 "Interception"
  26 "Miscontrol"
  27 "Foul Won"
  28 "Foul Committed"
  28 "Goal Keeper"
  34 "Block"
  34 "Dribble"
  67 "Clearance"
  86 "Duel"
 108 "Ball Recovery"
 355 "Pressure"
 841 "Carry"
1001 "Ball Receipt*"
1038 "Pass"
```

3788753.json – eksempel på skud-event.