Supplementary Material for 'Teaching Computers to See Patterns in Scatterplots with Scagnostics'

Harriet Mason, Stuart Lee, Ursula Laa, Dianne Cook

Data dictionaries

AFLW

- *timeOnGroundPercentage*: percentage of the game the player was on the field.

- *goals*: the 6 points a team gets when the kick the ball between the two big posts.

- *behinds*: the 1 point a team gets when they kick the ball between the big post and small post.

- *kicks*: number of kicks done by the player in this game.

- *handballs*: number of handballs does by the player in the game.

- *disposals*: the number kicks and handballs a player has.

- *marks*: total number of marks in the game (the ball travels more than 15m and the player catches it without another player touching it or it hitting the ground).

- *bounces*: the number of times a player bounced the ball in a game. A player must bounce the ball if they travel more than 15m and they can only bounce the ball once.

- *tackles*: Number of tackles performed by the player.

- *contestedPossessions*: the number of disposals a player has under pressure, i.e if a player is getting tackled and the get a handball or kick out of the scuffle.

- *uncontestedPossessions*: the number of disposals a player has under no pressure where they have space and time to get rid of the ball.

- *totalPossessions*: The total number of time the player has the ball.
- *inside50s*: the number of times the player has the ball within the 50m arc around the oponents goals.

- *marksInside50*: the number of marks a player gets within the 50m arc around the oponents goals.

- *contestedMarks*: the number of marks a player has under pressure.
- *hitouts*: this is how many times a player or team taps or punching the ball from a stoppage.
- *onePercenters*: all the things a player can do without registering a disposal. Eg. Spoils (punching the ball to stop someone from marking it), Shepparding (blocking for a teammate), smothering.
  disposalEfficiency: a measure of how well a player disposes of the ball. E.g. if a player kicks or handballs to the opposition a lot, they will have a low disposal efficiency percentage.

- *clangers*: this is how many times a player or team dispose of the ball and it results in a turnover to the other team.

- *freesFor*: this player was awarded a free kick.

- *freesAgainst*: this player caused a free kick to be awarded to the other team.

- *dreamTeamPoints*: this is fantasy football scoring points.

- *rebound50s*: how many times the player exits the ball out of their defence 50m arc.

- *goalAssists*: number of times the player gave the pass immediately before the player that scored a goal.
- *goalAccuracy*: percentage ratio of the number of goals kicked to the number of goal attempts.

- *turnovers*: this players disposal caused a turnover (the ball touches the ground and the other team get it).

- *intercepts*: number of times this player intercepts the disposal of the other team.
- *tacklesInside50*: number of tackles performed by this player within their defence 50m arc.

- *shotsAtGoal*: number of total shots at goal for this player (sum of goals, behinds and misses)
- *scoreInvolvements*: number of times the player was involved in a passage of play leading up to a goal.
- *metresGained*: how far a player has been able to advance the ball without turning it over.

- *clearances.centreClearances*: this is the clearance from the centre bounce after a goal or at the start of a quarter
- *clearances.stoppageClearances*: all the clearance from stoppages around the ground
- *clearances.totalClearances*: how many time a player or team clears the ball from a stoppage or from the centre

Black Hole Merger

Its position in the sky (three variables: ra, dec, distance), the time of the event (time), the black hole properties (masses m1 and m2; spin related properties alpha, theta_jn, chi_tot, chi_eff, chi_p), and additional nuisance parameters psi (polarisation angle) and phi_jl (orbital phase).

World Bank Indicators

- NV.AGR.TOTL.ZS Agriculture, value added (% of GDP)
- EN.ATM.CO2E.PC CO2 emissions (metric tons per capita)
- NE.EXP.GNFS.ZS Exports of goods and services (% of GDP)
- DT.DOD.DECT.CD External debt stocks, total (DOD, current US$)
- SP.DYN.TFRT.IN Fertility rate, total (births per woman)
- NY.GDP.MKTP.CD GDP (current US$)
- NY.GNP.MKTP.PP.CD GNI, PPP (current international $) TX.VAL.TECH.MF.ZS High-technology exports (% of manufactured exports)
- SH.IMM.MEAS Immunization, measles (% of children ages 12-23 months)
- NE.IMP.GNFS.ZS Imports of goods and services (% of GDP)
- NV.IND.TOTL.ZS Industry, value added (% of GDP)
- SP.DYN.LE00.IN Life expectancy at birth, total (years)
- TG.VAL.TOTL.GD.ZS Merchandise trade (% of GDP)
- MS.MIL.XPND.GD.ZS Use and distribution of these data are subject to Stockholm International Peace Research Institute (SIPRI) terms and conditions. Military expenditure (% of GDP)
- IT.CEL.SETS.P2 Mobile cellular subscriptions (per 100 people)
- SH.DYN.MORT Mortality rate, under-5 (per 1,000 live births)

- SP.POP.TOTL Population, total
- SH.DYN.AIDS.ZS Prevalence of HIV, total (% of population ages 15-49)
- GC.TAX.TOTL.GD.ZS Tax revenue (% of GDP)
- EG.ELC.ACCS.ZS Access to electricity (% of population)
- NY.ADJ.NNTY.CD Adjusted net national income (current US$)
- SH.HIV.INCD.TL Adults (ages 15+) and children (ages 0-14) newly infected with HIV
- AG.LND.AGRI.ZS Agricultural land (% of land area)
- ER.FSH.AQUA.MT Aquaculture production (metric tons)
- AG.LND.ARBL.HA.PC Arable land (hectares per person)
- MS.MIL.TOTL.TF.ZS Armed forces personnel (% of total labor force)
- FB.BNK.CAPA.ZS Bank capital to assets ratio (%)
- SE.COM.DURS Compulsory education, duration (years)